WORDSWORTH IN THE PRESENT DAY

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MY OWN TITLE for this paper originally was "The Secondary Causes of the Respect paid to Wordsworth in the Present Day," but I was persuaded by some of my friends to adopt one that was shorter and which seemed a little less allusive and cute. I yielded when I remembered that Gibbon did not put the irony of his notorious Chapter XV into its title: he gave that chapter the bland heading "The Progress of the Christian Religion," and revealed his subversive strategy only in his third paragraph. I should like, however, to mention my suppressed title, not just to be cute, but in order to indicate the humble nature of my approach. Gibbon wrote with solemn sneer, but if he had been a Christian instead of a rather malicious ironist, it is hard to see how he could have written at much greater length of his primary cause than he actually did: "it was owing to the convincing evidence of the doctrine itself, and to the ruling providence of its great Author." The workings of Divine Providence are not subject to historical dissection. So, too, if I should try to develop the dogmatic assumption that respect has been paid to Wordsworth in the last fifty years because he is at all times absolutely and irresistibly a great poet, I should very quickly run out of words. All the evidence accessible to me seems historical, seems like Gibbon's secondary causes. I can discern several reasons why Wordsworth is not wholly uncongenial to post-*Wasteland* sensibility, and I propose to talk about those. I must warn you that what I have to say will to a considerable extent be an exercise in historical construction, for I was born in the nineteenth century, and my own sensibility was already beginning to harden when *The Wasteland* came along. Furthermore, my notions of what obtains at the present day may be quaint. It may very well be that my assessment would have been more appropriate for the Centenary of Wordsworth's death in 1950 than for the Bicentenary of his birth in 1970.

Significant modern criticism of Wordsworth has not been ecstatic, but it has generally been respectful. We have had acute and satisfying critical essays on Wordsworth from Ransom, from Leavis, and from Brooks. Empson is irreverent but even Empson shows admiration. One would hardly have expected this, by which I mean that it is much easier for one born in the nineteenth century to think of reasons why modern critics should be hostile or cold to Wordsworth than of reasons why they should respect him and perhaps enjoy him. Let me specify.

The modern approval of Wordsworth cannot be due to fondness for him as a person. Perhaps is it unfair even to suggest that the moderns can be guilty of biographical involvement, for it was they who first established the doctrine that biography and criticism are immiscible modes, and that when you are engaged in biography, you cannot be criticizing a poem. Undoubtedly the moderns have been clearer-headed and more scrupulous on this score than any previous literary generation, yet it would be strange if they had escaped all contamination. Modern criticism of Keats and Shelley, I fear, suffers from irrelevant personal affection for Keats and irrelevant personal dislike of Shelley. Keats is indeed almost irresistibly attractive, but Wordsworth! Shelley called him "a solemn and unsexual man." [1] We know a great deal more about the facts of Wordsworth's life than Shelley did, but for all his youthful revolutionary ardor and his French daughter, Wordsworth remains an arrogant and rather unlovable personality. Perhaps, though it sounds like a paradox, that contributes to the moderns' esteem. A modern critic is perhaps grateful when he comes on a poet whose person he feels called upon neither to like nor to dislike, a poet who does not distract him from his proper job. Milton is perhaps a similar case.

But to turn to the poetry. Surely it is very hard to see how Wordsworth's poetry meets New Critical specifications in any obvious sense or in any large degree. Donne is still the type poet of the New Criticism, and Wordsworth's poetry was consciously opposed to the Metaphysical mode. Wit he avoided on principle as being petty and cold-hearted.[2] Such humor as he shows in his verse is of a waggish and earthy sort that he called "drollery." One very seldom finds in his poetry the large controlling figure beloved of the Metaphysicals; indeed, as Ransom was perhaps the first to point out, Wordsworth managed to write an astonishing number of respected poems without employing any figurative language at all. Though he is not wholly without irony and paradox, as Brooks has demonstrated, his poetry at large (I quote Ransom again, this time directly) offers lean hunting in that species of game.[3] He scorns all the density, the obliquity and indirection treasured by the moderns: he not only tells you straight out how you are to take his poems, he keeps on telling you. Witness the relentless literal unfigurative iteration of the solitariness of the old Cumberland beggar, his extreme old age and decrepitude: aged, aged, solitude, palsied, solitary, helpless, old, aged, aged, aged, old, solitary—all in forty-four lines. Obscurity he certainly does offer, but never of the compacted Metaphysical sort. When a poem of Wordsworth's is obscure (*Simon Lee* is a good example), it is not because you have any difficulty with the syntax or the allusions. The sense is plain enough but not the point: you feel as though the poem were so open that you have fallen straight through it without touching it anywhere. Nearly all of Wordsworth's poetry is vulnerable to ironic contemplation; he is probably the most parodied of English poets, evoking malicious attention from parodists as diverse as Bishop Mant and Lewis Carroll. When D. B. Wyndham Lewis wanted a title for an anthology of bad verse, he looked for and found it in Wordsworth: *The Stuffed Owl*.[4] Wordsworth's verse is mild, grave, serene, noble—uncaptivating qualities nowadays. And finally he obtrudes a great deal of explicit doctrine of a kind not now in favor. He proclaimed himself a Teacher; he preaches, indeed he preaches.

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[1] *Peter Bell the Third*, VI. xix. 4.

What then are the virtues that overbalance so formidable an array of disqualifications? How *can* Wordsworth win respect from modern sensibility? My first reason, I am sure, will surprise you. It is, I suggest, because he is so competent and scrupulous a craftsman. Modern criticism differs from Romantic criticism in its determination to avoid general affective terms like "beauty" and to look for the cause of poetic effect in specific verbal strategies. To a reader who has trained himself to watch how a poet is doing his stuff, all, literally all, of Wordsworth's poetry is rewarding. He published dull poems, flat poems, wrong-headed poems, but he almost never published genuinely careless, genuinely uncraftsmanlike poems. I found this out through the extensive annual review I had to make while teaching the graduate course in Age of Wordsworth at Yale. I came back to what I might call the silent majority of the poems of the other voluminous poets in that course with a sense of effort and duty, but I always moved into Wordsworth with pleased anticipation. I read on and on in his lesser-known verse, never finding anything I preferred to poems already in the anthologies, but with a constant sense of pleasure and a wish to continue. Next to Milton, Wordsworth is surely our most thoughtfully finished poet. He had a demon that drove him to rewrite. Too often he made changes, not because the poem was not finished as it stood, but because his ideas had changed, and that is a pity; but knowledgeable readers can always pick the best versions, and the others are the best commentary in the world.

Secondly, I think the moderns approve of and are attracted by Wordworth's determination to look steadily at his subject.[5] This meant, among other things, that in serious poetry ("Poetry of the Imagination") he was determined to restrict himself to actually existing, concrete, everyday objects, the objects of "the very world, which is the world of all of us."[6] Serious poetry before Wordsworth made use of all kinds of consecrated superstition and traditional make-believe. The great Milton in *Paradise Lost* thinks bees and elves equally eligible as matter for extended similes; Pope in his *Essay on Man* draws illustrations indiscriminately from observed nature and the medieval bestiaries.[7] Since Wordsworth it has not been so easy. Witness Coleridge, writing in 1796 before he had been much exposed to Wordsworth:

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[2] "Upon Epitaphs" I (*Wordsworth's Literary Criticism*, ed. N. C. Smith, p. 93).

[3] "William Wordsworth: Notes toward an understanding of Poetry" (*Wordsworth*, ed. G. T. Dunklin, 1951, pp. 99, 101).

[4] Miscellaneous Sonnets III. xiii ("While Anna's peers and early playmates tread"), line 10.

[5] Preface of 1800, Paragraph 9.

[6] *Prelude* xi. 142–143.

[7] *Paradise Lost*, i. 768–775, 780–788; F. A. Pottle, "The Eye and the Object in the Poetry of Wordsworth" (*Wordsworth*, ed. G. T. Dunklin, 1951, pp. 34–36).

> Such a soft floating witchery of sound
> As twilight Elfins make, when they at eve
> Voyage on gentle gales from Fairy-Land,
> Where Melodies round honey-dropping flowers,
> Footless and wild, like birds of Paradise,
> Nor pause, nor perch, hovering on untam'd wing![8]

He cut those lines out in 1803, undoubtedly, I should say, because of Wordsworth's Preface of 1800. He restored them in 1817, and they probably were too good to lose, but to modern sensibility do they not look a little wilted? To a modern reader, how much more satisfying and effective are the images of *Dejection,* written in 1802:

> This night, so tranquil now, will not go hence
> Unroused by winds, that ply a busier trade
> Than those which mould yon cloud in lazy flakes,
> Or the dull sobbing draft, that moans and rakes
> Upon the strings of this Æolian lute,
> Which better far were mute.
> For lo! the New-moon winter-bright!
> And overspread with phantom light,
> (With swimming phantom light o'erspread
> But rimmed and circled by a silver thread)
> I see the old Moon in her lap, foretelling
> The coming-on of rain and squally blast.

But I deviate into the diachronic mode. What I should be saying is that though one might find elves and footless birds of Paradise in Wordsworth's playful verse (he has a large section of poems called "Poems of the Fancy"), one does not have to cope with them in his serious verse:

> Long have I loved what I behold,
> The night that calms, the day that cheers;
> The common growth of mother-earth
> Suffices me—her tears, her mirth,
> Her humblest mirth and tears.
>
> The dragon's wing, the magic ring,
> I shall not covet for my dower,
> If I along that lowly way
> With sympathetic heart may stray,
> And with a soul of power.
>
> These given, what more need I desire
> To stir, to soothe, or elevate?
> What nobler marvels than the mind
> May in life's daily prospect find,
> May find or there create?[9]

Public approval by Robert Frost of anything in Wordsworth would always have been patronizing n tone. He would not have written that last stanza, and he would have worked some quizzical or ironical gestures into the other two. But I have no doubt that he would have pronounced all three stanzas good sense and good poetry.

Modern sensibility is notoriously wary of sentiment and recoils in strong distaste from sentiment that it considers excessive. Hoxie Fairchild, our great Inquisitor of Romantic heresy, is fain to admit that though Wordsworth is chock-full of sentiment, he almost never succumbs to sentimentalism in the pejorative sense of the term.[10] You may say, if you wish, that Wordsworth's poetic sensibility was tough, mature, and well balanced, but it would be more useful to identify some of the techniques which he employs to keep himself within bounds. I consider Shelley's *Ode to the West Wind* a very great poem and can take in stride the now much-questioned line "I fall upon the thorns of life! I bleed!" but I grant that the strategy of that line is risky. (One of my undergraduate students of years ago—I wish I knew where he is now, for I did not appreciate him enough—once wrote in an examination, "Shelley is utterly without fear. He puts his hands right in the fire.") Shelley's poem at this point would undoubtedly have seemed more formidable to modern taste if he had followed more closely the method of the Hebrew poems that were in general the models for this ode. The Psalmist had never heard of the canon 'gainst self-pity: his songs often consist of prolonged and strident wail. But the imagery of his wail tends always to the harsh, the grotesque, the surrealistic:

> I am poured out like water and all my bones are out of joint; my heart also in the midst of my body is even like melting wax. My strength is dried up like a potsherd, and my tongue cleaveth to my gums, and thou bringest me into the dust of death. For many dogs are come about me, and the council of the wicked layeth siege against me. They pierced my hands and my feet; I may tell all my bones; they stand staring and looking upon me. They part my garments among them and cast lots upon my vesture.[11]

Wordsworth, too, curbs sentimentalism with grotesqueness, and the grotesque is never far to seek in the Wordsworthian sublime. Vision in Wordsworth is evoked by a dreary landscape and a solitary grotesque human figure:

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[8] *Eolian Harp,* lines 20–25.

[9] *Peter Bell, Prologue,* lines 131–145.

[10] *Religious Trends in English Poetry* (1949), iii. 187.

[11] Psalm 22. 14–18 (Prayer Book version).

> I fled,
> Faltering and faint, and ignorant of the road:
> Then, reascending the bare common, saw
> A naked pool that lay beneath the hills,
> The beacon on the summit, and, more near,
> A girl, who bore a pitcher on her head,
> And seemed with difficult steps to force her way
> Against the blowing wind. It was, in truth,
> An ordinary sight; but I should need
> Colours and words that are unknown to man,
> To paint the visionary dreariness
> Which, while I looked all round for my lost guide,
> Invested moorland waste, and naked pool,
> The beacon crowning the lone eminence,
> The woman and her garments vexed and tossed
> By the strong wind.[12]

Or that supremely grotesque old Man he suddenly came upon on the moors, again beside a naked pool, the oldest man that ever wore gray hairs, propping his bent body on a long shaved wooden staff:

> While he was talking thus, the lonely place,
> The old Man's shape, and speech—all troubled me;
> In my mind's eye I seemed to see him pace
> About the weary moors continually,
> Wandering about alone and silently.[13]

Arnold, you will remember, picked as the best single line to represent Wordsworth that utterly literal, unheightened, straightforward line from *Michael*:

> And never lifted up a single stone.[14]

Any critic who asserts the attractive power of Wordsworth for modern readers must explain how that attraction can be reconciled with the strong modern distaste for direct statement in serious verse. I shall turn to R. P. Warren for an explanation, and shall cite as my fourth cause Wordsworth's remarkable power of *earning* direct statement. Warren, you remember, says that the impact of that line which Arnold seems to regard as the most infallible of all his touchstones, Dante's

> E la sua volontate è nostra pace,[15]

does not come solely from that line but from that line in context. By packing a long stretch of earlier lines with vivid concretions, Dante *earns* his theology in verse.[16] I hope Warren does not mean that "E la sua volontate è nostra pace" is not in itself poetry. I read it detached in Arnold long before I read it in context in Dante and almost choked over it. In the same way I read "And never lifted up a single stone" in Arnold before I had read *Michael* or knew what *Michael* was about, and added it instantly to my store of personal treasures. It's hard for me now to say why, but I think it was because both lines, in the triumphant economy of their diction and meter, proclaimed themselves punch lines: I knew I could never in the world have imagined *them*, but I thought it would be easy to imagine contexts for them. Yet surely Warren is right in suggesting that a poem *all* in the style of "E la sua volontate è nostra pace" would in most cases be flat, and even when not flat, would be daringly austere. Here is Wordsworth asserting his right to be austere:

> I thought of Thee, my partner and my guide,
> As being past away.—Vain sympathies!
> For, backward, Duddon! as I cast my eyes,
> I see what was, and is, and will abide;
> Still glides the Stream, and shall for ever glide:
> The Form remains, the Function never dies;
> While we, the brave, the mighty, and the wise,
> We Men, who in our morn of youth defied
> The elements, must vanish;—be it so!
> Enough, if something from our hands have power
> To live, and act, and serve the future hour;
> And if, as toward the silent tomb we go,
> Through love, through hope, and faith's
> transcendent dower,
> We feel that we are greater than we know.[17]

You will never get Wordsworth right if you think of him as poetically timid. On the contrary, he was almost perversely daring: he saw poetic virtue in narrow misses; he loved to walk the tightrope over gulfs of declamation and bathos. It is most modern poets who are timid and shy away from risks. But one, perhaps the greatest of them all, was sometimes almost as fearless as Wordsworth. By two lines near the end of *An Irish Airman Foresees his Death* Yeats earns the perfectly simple prose directness of the other fourteen:

> I know that I shall meet my fate
> Somewhere among the clouds above;
> Those that I fight I do not hate,
> Those that I guard I do not love;
> My country is Kiltartan Cross,
> My countrymen Kiltartan's poor,
> No likely end could bring them loss
> Or leave them happier than before.
> Nor law nor duty bade me fight,

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[12] *Prelude* xii. 246–261 ("woman" in line 260 from 1805 version).

[13] *Resolution and Independence*, lines 127–131.

[14] "Wordsworth," in *Essays in Criticism, Second Series*.

[15] *Paradiso*, iii. 85.

[16] "Pure and Impure Poetry." Accessible in R. W. Stallman ed., *Critiques and Essays in Criticism 1920–1948*, pp. 103–104.

[17] *The River Duddon* XXXIV ("After-Thought").

Nor public men, nor cheering crowds,
A lonely impulse of delight
Drove to this tumult in the clouds;
I balanced all, brought all to mind,
The years to come seemed waste of breath,
A waste of breath the years behind
In balance with this life, this death.

But though *An Irish Airman* is in technique a very Wordsworthian poem, I ought to be illustrating from Wordsworth himself. Here is the way he earns that relentless iteration of denotative words I cited from *The Old Cumberland Beggar* (aged, aged, solitude, palsied, solitary, and the rest):

I saw an aged Beggar in my walk;
And he was seated, by the highway side,
On a low structure of rude masonry
Built at the foot of a huge hill, that they
Who lead their horses down the steep rough road
May thence remount at ease. The aged Man
Had placed his staff across the broad smooth stone
That overlays the pile; and from a bag
All white with flour, the dole of village dames,
He drew his scraps and fragments, one by one;
And scanned them with a fixed and serious look
Of idle computation. In the sun,
Upon the second step of that small pile,
Surrounded by those wild unpeopled hills,
He sat, and ate his food in solitude:
And ever, scattered from his palsied hand,
That, still attempting to prevent the waste,
Was baffled still, the crumbs in little showers
Fell on the ground; and the small mountain birds,
Not venturing yet to peck their destined meal,
Approached within the length of half his staff.[19]

I suspect that as you read some of you didn't notice the denotative words, though I had warned you to be on the lookout for them. If you did notice them, they perhaps seemed to you superfluous. They told you to get set for a response, but the response seemed to come entirely from the poetic concretions: the serious mindless gaze of the old man, the showers of crumbs, the approaching birds. I feel sure that they are not superfluous, and that we need some kind of terminology that signals at once their non-poetic character and their poetic usefulness. I propose to call them catalysts: Ransom might call them looseners or clampers. A catalyst is a substance that accelerates a chemical reaction while remaining recoverable itself at the end of the reaction. For example, sulphur trioxide gas, an important chemical because from it one can make sulphuric acid merely by passing it into water, cannot be profitably manufactured simply by bringing sulphur dioxide and oxygen together. If, however, the mixed gases are passed at the proper temperature through platinum deposited on asbestos fibre, the reaction proceeds rapidly and none of the platinum is used up. When I studied chemistry more than fifty years ago, it was commonly assumed, I think, that the reaction proceeded in two steps: the platinum, that is, combined with one of the gases, and this intermediate compound then reacted with the other gas, the platinum being dropped out. Nowadays the favored explanation is stereochemical. In order for a reaction to proceed at optimum speed, it is now believed, the combining molecules must face each other in a certain way, and the bonds that unite the atoms must be loosened. The molecules of the catalyst, it is now assumed, clamp onto the molecules of one or both of the reacting substances and hold them in the required posture, at the same time loosening the bonds. A catalyst may in a real sense be inert and yet be the cause of a great deal of chemical activity. In the same way, I suggest, the output of poetic concretions may be greatly increased by judicious juxtaposition of language in itself merely denotative.

You must have anticipated my fifth reason from the start and must have been wondering why I didn't get to it sooner. Wordsworth is with the moderns in his passion for psychology and psychologizing. His great autobiographical poem, *The Prelude*, bears as its sub-title *Growth of a Poet's Mind*. In the Prospectus to *The Recluse*, that huge unfinished work of which *The Prelude* and *The Excursion* are only fragments, he matches himself proudly with Milton and announces that he has a greater subject than Jehovah with his thunder and the choir of shouting angels:

Not Chaos, not
The darkest pit of lowest Erebus,
Nor aught of blinder vacancy, scooped out
By help of dreams—can breed such fear and awe
As fall upon us often when we look
Into our Minds, into the Mind of Man—
My haunt, and the main region of my song.

The Prelude does not merely look forward to authors like Proust, it can hold its own with any of them in the sharpness, vividness, and freshness of its recall of the past. No writing known to me has more compelling power than Wordsworth's accounts of what he happily calls "spots of time": recollected scenes of terror or intense uneasiness from his childhood which seemed to him in his later years paradoxically refreshing. I presented the latter part of one of these descriptions to you earlier in this paper. He tells how, when he was not yet six years old and hardly able to rein a horse, he had ridden out on the hills with an old servant of his father's, had lost his guide, dismounted through fear, led his horse stumbling down to the bottom, and there had come upon initials carved in the turf which he knew from previous report to mark the spot where a murderer had once been hung in chains. The part I quoted then followed:

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[19] *Old Cumberland Beggar*, lines 1–21.

> I fled,
> Faltering and faint, and ignorant of the road.

The Prelude is the first "stream of consciousness" poem in European literature. Its organization is more associational than logical: its organizing metaphor is not a building but a river.

Gibbon needed only five causes, but I should feel unsatisfied if I could not present one more. My sixth will need some explaining before I name it.

People are scared off from Wordsworth because they have been told—correctly—that he preaches a religion of nature variously called nature-mysticism, pantheism, panentheism. I was myself throughout my youth consciously wary of him for just this reason. I grew up on a farm in lake country (Cumberland County—Maine) not too unlike his; my boyhood experiences of the outdoors were remarkably like his; I had my spots of time just as he did. But though I experienced ecstacy or a sense of heightened awareness in confrontations with nature, I never recognized any element of religion in these encounters. I am not and never have been what I may call an experiencing pantheist or panentheist, and I felt that I would be digusted or bored by a poet who preached such doctrine. Nobody told me that none of the better Wordsworthians—Coleridge, Arnold, Swinburne, Raleigh, Bradley, Whitehead, Sperry, Willey, Havens—was a practicing pantheist or panentheist either, but the fact is so, as I realized while I was writing this paper. I did not begin reading and rereading Wordsworth seriously till my mid-thirties, and I then began because I had begun teaching the Age of Wordsworth. And I found (it wouldn't be honest to say I soon found) that the preaching not only didn't bother me but that I had come to like most of it.

T. S. Eliot once remarked that meaning in poetry is the piece of meat that the burglar tosses to the watchdog to divert his attention while the burglar goes about his business.[19] R. P. Warren rebuked him rather sharply,[20] but there is truth that has to be faced under Eliot's cynicism. I get value out of Wordworth, not by giving creedal assent to his doctrine, not by ignoring his doctrine, and certainly not in spite of his doctrine. I entertain the doctrine seriously but provisionally within the confines of a poem. A surprising amount of the doctrine is indeed stated provisionally ("Nor less, I trust . . ."; "If this be but a vain belief . . ."; "And so I dare to hope . . ."; "I would believe . . ."). Arnold said that we cannot do Wordsworth justice until we dismiss his formal philosophy; I would say that, save for the purpose of explicating his poetry or of fitting it into literary history, we ought not to abstract the philosophy, ought not formalize it at all. We should take it within the poems exactly as we take the literal iteration of *The Old Cumberland Beggar;* we should take it, that is, because it serves as catalyst for invaluable concretions:

> For I have learned
> To look on nature, not as in the hour
> Of thoughtless youth; but hearing oftentimes
> The still, sad music of humanity,
> Nor harsh nor grating, though of ample power
> To chasten and subdue. And I have felt
> A presence that disturbs me with the joy
> Of elevated thoughts; a sense sublime
> Of something far more deeply interfused,
> Whose dwelling is the light of setting suns,
> And the round ocean and the living air,
> And the blue sky, and in the mind of man:
> A motion and a spirit, that impels
> All thinking things, all objects of all thought,
> And rolls through all things.[21]

But is my assent *all* provisional? Am I not perhaps letting a real acceptance of part of his doctrine serve as sanction for the rest? The Judaeo-Christian tradition has two great commandments: Thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy mind, and with all thy strength; and Thou shalt love thy neighbor as thyself.[22] Theologians would say it is the first commandment that makes sense of the second. But do not many people for whom the first commandment no longer has any reality continue to adhere to the tradition because of their warm assent to the second? The first article of

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[19] *The Use of Poetry and the Use of Criticism* (Harvard University Press, 1933), p. 144.

[20] "Pure and Impure Poetry," as above, pp. 99–100.

[21] *Lines composed . . . above Tintern Abbey,* lines 88–102.

[22] Mark 12.30–31; Leviticus 19.18.

Wordsworth's poetical faith is that God rolls through all things; the second is the connection and relation of things, the silence and the balm of mute insensate things, the life of things. "The brooding, immediate presences of things are an obsession to Wordsworth," says Whitehead.[23] Wordsworth was the first poet to relate man to his natural environment in a really modern way, the first to insist passionately and endlessly on the folly and wickedness of isolating him from his ground. He is sometimes very sharp about this, too sharp indeed to be poetical:

> Sweet is the lore which Nature brings;
> Our meddling intellect
> Mis-shapes the beauteous forms of things;—
> We murder to dissect.[24]
>
> Physician art thou?—one, all eyes,
> Philosopher!—a fingering slave,
> One that would peep and botanize
> Upon his mother's grave?[25]

You will see now what my sixth and last cause is. Wordsworth is the poet *par excellence* of the whole range of ecological sentiment, and his sense of the interdependence of man and his environment is expressed in an idiom which remains grateful to present-day sensibility. I hope to demonstrate it by quoting the whole of a blank-verse poem which I have chosen in the hope that it will be unfamiliar to some readers. It will, I also hope, be more winning than others I could have selected, because Wordsworth, who tends to scold on this subject, here passes judgment on nobody but himself. If you want to carry away with you, to ponder on, a fine example of Wordsworth's peculiar power, I recommend to you the phrase "the intruding sky" in the fourth line from the end.

> It seems a day
> (I speak of one from many singled out)
> One of those heavenly days that cannot die;
> When, in the eagerness of boyish hope,
> I left our cottage-threshold, sallying forth
> With a huge wallet o'er my shoulders slung,
> A nutting-crook in hand; and turned my steps
> Tow'rd some far-distant wood, a Figure quaint.
> Tricked out in proud disguise of cast-off weeds
> Which for that service had been husbanded,
> By exhortation of my frugal Dame—
> Motley accoutrement, of power to smile
> At thorns, and brakes, and brambles,—and in truth
> More ragged than need was! O'er pathless rocks,
> Through beds of matted fern, and tangled thickets,
> Forcing my way, I came to one dear nook
> Unvisited, where not a broken bough
> Drooped with its withered leaves, ungracious sign
> Of devastation; but the hazels rose
> Tall and erect, with tempting clusters hung,
> A virgin scene!—A little while I stood,
> Breathing with such suppression of the heart
> As joy delights in; and with wise restraint
> Voluptuous, fearless of a rival, eyed
> The banquet;—or beneath the trees I sate
> Among the flowers, and with the flowers I played;
> A temper known to those who, after long
> And weary expectation, have been blest
> With sudden happiness beyond all hope.
> Perhaps it was a bower beneath whose leaves
> The violets of five seasons re-appear
> And fade, unseen by any human eye;
> Where fairy water-breaks do murmur on
> For ever; and I saw the sparkling foam,
> And—with my cheek on one of those green stones
> That, fleeced with moss, under the shady trees,
> Lay round me, scattered like a flock of sheep—
> I heard the murmur and the murmuring sound,
> In that sweet mood when pleasure loves to pay
> Tribute to ease; and, of its joy secure,
> The heart luxuriates with indifferent things,
> Wasting its kindliness on stocks and stones,
> And on the vacant air. Then up I rose,
> And dragged to earth both branch and bough, with crash
> And merciless ravage: and the shady nook
> Of hazels, and the green and mossy bower,
> Deformed and sullied, patiently gave up
> Their quiet being: and unless I now
> Confound my present feelings with the past,
> Ere from the mutilated bower I turned
> Exulting, rich beyond the wealth of kings,
> I felt a sense of pain when I beheld
> The silent trees, and saw the intruding sky.—
> Then, dearest Maiden, move along these shades
> In gentleness of heart; with gentle hand
> Touch—for there is a spirit in the woods.[26]

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[23] *Science and the Modern World* (1925 and later), p. 134.

[24] *The Tables Turned,* lines 25–28.

[25] *A Poet's Epitaph,* lines 17–20.

[26] *Nutting.*

SIR WALTER SCOTT—YESTERDAY AND TODAY

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(Read April 21, 1972, in the Symposium on Wordsworth, Scott, and Coleridge)

IF THIS SYMPOSIUM on three great British Romantic writers had been organized a decade ago, I doubt whether Sir Walter Scott would have been included in the American Philosophical Society's program. But quickening interest and confidence have replaced the old defensive attitudes, and Scott's standing among scholars has never been higher than at the present time.

I shall limit my discussion to the Waverley novels, which are still somewhat in demand, whereas Scott's poetry, plays, and biographies, his histories and translations, editions and criticism, his scholarly and antiquarian work are much neglected. A contrast of Scott's reading public in his own day and in ours will suggest how much the base of interest has changed. In eight years Scott and his publishers worked the price of the novels up from a guinea for *Waverley* in three volumes to two guineas for *Peveril of the Peak* in four. The equivalent today would be a rise from at least sixteen dollars a title to thirty-two. The only readers who could afford to have the popular novelist in their homes were aristocrats and well-to-do members of the middle class. Those not so well off could join subscription libraries, see competing dramatic versions of the novels, or buy these adaptations for half a crown each (about two dollars in modern currency). Scott also had a lower class and a juvenile following from 1816 to 1830 which read English and Scottish chapbook condensations about twenty-four pages in length and costing from one penny to sixpence (seven to forty cents). In whatever form the Waverley novels reached his contemporaries, as pamphlets, dramas (including musical plays), or full-length stories, Scott was read because he held and entertained his public.

One presses a sensitive nerve in Scotland by asking whether Sir Walter is much read. Yet in 1966, at that gathering of the loyal, the annual dinner of the Edinburgh Sir Walter Scott Club, the Hon. Lord Cameron said, while toasting "The Memory of Scott," "Today Scott's novels tend, for the most part, to lie undisturbed on the library shelves." Three years later, however, in proposing the same toast, Ludovic Kennedy reported that Dickens tops the list, Trollope and Thackeray tie for second place, "and Scott is a close fourth" among users of the Edinburgh Public Library.

My own very recent enquiries show that interest in Scott is holding up in Edinburgh and Glasgow libraries. Scottish booksellers have a somewhat different view. James Thin of Edinburgh now sells "more books about Scott than by Scott. This is extremely sad." David Daiches's *Sir Walter Scott and His World*, a short life-and-works with 144 illustrations, "has sold in phenomenal numbers." John Smith of Glasgow comments on an earlier forcefeeding of Scott in which the "kiss of death" was the use of Scott as school prizes. Any upsurge in demand has been due less to centenaries and exhibitions than to radio, television, and film versions, *Ivanhoe* being most frequently mentioned, or to the choice of a Waverley novel for school examination.

The usual English librarian's response is that the demand for Scott between the two centenary years, 1932 and 1971, was "small but constant." Educational stimulus is mentioned by the Staffordshire County Librarian: "His works appear frequently on reading lists issued by schools and colleges. It is only among older readers, it seems to me, that a novel by Scott would be read for pleasure." But there are parts of England where requests are so infrequent that, as in most of the Durham branch libraries, Scott is "kept in the reserve stacks" rather than on display for lending.

My survey of libraries in large American cities has brought more uniform replies, indicating a steady decline in the reading of Scott. The gloomiest letters have come from the Chicago Public Library ("Certainly to the general public his writings are unknown. . . . With the exception of a very few elderly patrons, Scott is read only by the student and the scholar") and from the Free Library of Philadelphia ("It is the general consensus of opinion that Scott is largely unread by our patrons, and anniversaries of his

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birth and death have resulted in no increased interest in his works").[1]

Listings in *Books in Print,* ranging from 60¢ to $265, and in *British Books in Print* suggest that Scott's most numerous buyers today are students, scholars, and college libraries. I cannot agree with Anna Balakian that "The real judge of a book's value is the university readership. . . . The 'kids' and their teachers . . . keep the real books alive."[2] The other extreme is approached by a London *Times Literary Supplement* reviewer of recent work on Carlyle: Scholars can at times be "resurrection-ghouls, however nice they may be at home to their children."[3] Whether researchers are resurrectionists, body-snatchers of a new order, one wonders how long an author can survive on mounting scholarly esteem while his general public dwindles. I myself am not happy to see the first English best-selling novelist transformed into a prescriptive and elitist author.

Instead of the three types of readers in Scott's day, roughly divided by culture, economy, and age, his following today, students, older readers with early formed preferences, and scholars, is motivated by assignments, nostalgia, or research enthusiasm. Although a future is assured Scott by the professionals, his other support may be in doubt.

If I may predict, it is likely that within a generation Scott assignments will vanish from schools in America and will become rare in Britain. Library trends suggest that the voluntary reading of Scott by the mature will decline. This was foreseen a century ago by Leslie Stephen in *The Cornhill Magazine* of September, 1871. Detecting a "decay of interest in Scott," Stephen wonders whether there will be "some permanent residue to delight a distant posterity." This residue can best be assured by a contraction of the canon. Rich as the Scottish novels are from *Waverley* to *The Fair Maid of Perth*, the redirection of modern consciousness toward larger cultural and global units makes the particularity of locale, speech, and history less appealing, even less understandable, to readers. Attempts will be made to strip the better novels of prefaces, slow openings, and antiquarian notes, even to condense them as Samuel R. Crockett did in the *Red Cap Tales* of 1904–1908. Readers will no longer be drawn to such fully documented life materials as we have now. A service to the general reader was performed when Lockhart reluctantly reduced the bulk of the *Life* of his father-in-law; so it may be hoped that Edgar Johnson will become reconciled to abridging his ample and authoritative biography of Scott. There is perhaps a need for a highly selective life made up of Scott's autobiographical fragment of 1808, his letters, journals, and conversations.

This concentration of interest on the life in brief, a few lyrics and ballads, short stories like "Wandering Willie's Tale" and "The Two Drovers," and a novel or two may be Scott's residue of delight in a world of ever-accelerating change.

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As the contraction of the popular Scott canon set in after 1932, when the last collected edition of the Waverley novels was published, the expansion of that canon by scholars and for scholars began. This was the fifth of what may be called six great periods—surges and resurgences—of work on Scott.

The first, largely journalistic, outpouring came during Sir Walter's lifetime, from 1797, when the poet Scott was twenty-six, to 1832. Of this contemporary abundance the winnowing of time has left Francis Jeffrey, editor of the *Edinburgh Review;* John Leycester Adolphus, a barrister whose *Letters to Richard Heber* argued by internal evidence and by comparison of the anonymous novels with Scott's acknowledged narrative poems that "the Author of Waverley" was Scott; William Hazlitt; and the economist, Nassau William Senior. Among reviewers there was enthusiasm over the originality and variety of the novels, the assortment of living characters, and the historic sweep, but protests were often renewed against antiquarian pendantry and general carelessness, the result of haste, overproduction, and prolixity, against confused story lines, colorless heroes and flaccid heroines, and the difficulty of Lowland and Highland speech.

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[1] I have drawn on letters kindly sent me this year by the Central Library, Edinburgh (Feb. 21), the Mitchell Library, Glasgow (Feb. 24), James Thin (Feb. 21), and John Smith & Son (March 20); by the Durham County Library (Feb. 10), the West Riding County Library, Wakefield (Feb. 11), the Brown Library, Liverpool (Feb. 16), the Staffordshire County Library, Stafford (Feb. 17), the City of Cardiff Central Library (Feb. 23), the Westminster City Public Library, London (Feb. 25), the Lancashire County Library, Preston (March 2), and the Reference Library, Birmingham (March 3); and by the Cleveland Public Library (Feb. 28), the Los Angeles Public Library (March 1), the Milwaukee Public Library (March 2), the Enoch Pratt Free Library, Baltimore (March 9), the Detroit Public Library (March 15), the Free Library of Philadelphia (April 4), the Chicago Public Library (April 12), and the Houston Public Library (no date).

[2] "The University Circuit," a letter to the Editor in New York *Times Book Review* of March 19, 1972.

[3] *TLS* of November 26, 1971, p. 1472.

This largely critical period was followed by biographical and bibliographical activity during the six years after Scott's death, 1833–1838. Journalistic sketches and book-length lives were then in considerable demand. A number were produced by friends of the novelist's: Robert Chambers, Allan Cunningham, James Hogg, Washington Irving, and Robert Pearse Gillies. But these were overshadowed in 1837–1838 by Lockhart's seven-volume *Memoirs of the Life of Sir Walter Scott, Bart.* This biography I shall discuss later in relation to a controversy that still smolders.

The other great achievement was John George Cochrane's quarto *Catalogue of the Library at Abbotsford* (1838). My own copy was unopened —in the technical sense of its 464 pages never having been cut—when I bought it some 130 years after publication.[4] This is perhaps symptomatic of a failure in scholarship. Scott's range was forbiddingly great, from folk and antiquarian lore, magic, geography, travel, philosophy, theology, law, and politics to arts and sciences, memoirs, and—most impressively—history and literature in several languages. As Mr. Pottle has shown in "The Power of Memory in Boswell and Scott," what Sir Walter read he well retained. No wonder that many critics and biographers have taken the measure of their man without having the courage adequately to survey his learning.

The third and least rewarding period had its origin in 1871, the centenary of Scott's birth. Although a manual of Waverley characters, a study of Scott as poet and a description of "the lands of Scott," a defense of the Ballantyne Press in "its connection with Scott," and four lives came out in that centenary year, not much of value survives from the decade of the seventies except Leslie Stephen's "Some Words about Scott," already referred to, a catalogue of the Edinburgh Scott Exhibition, and R. H. Hutton's *Sir Walter Scott* of 1878 in the English Men of Letters series. The general tone was one of cautious admiration, of defensiveness against Carlyle's earlier attack, and of recognition that Scott was after all slipping.

It has long been a cliché of literary history that for half a century, from about 1880 to 1930, little serious attention was paid to Scott. Yet fine textual work appeared during the *fin de siècle* weariness with things Victorian and with such Victorian favorites as Sir Walter. This I consider the fourth period of significant activity. In 1890 and 1894 David Douglas edited Scott's *Journal* of 1825–1832 and then the *Familiar Letters* of Scott and his correspondents; George Saintsbury revised Scott's eighteen-volume edition of *The Works of John Dryden* in 1882–1893 and in 1897 contributed *Sir Walter Scott* to the Famous Scots Series; and James Logie Robertson edited Scott's poetry in 1894. Two great editions of the Waverley novels were both going through the presses from 1892 to 1894, the Dryburgh with its revised text and the Border with Andrew Lang's highly informative notes. Nor were the Edwardians indifferent to Scott, for Thomas F. Henderson brought out his careful four-volume edition of *Minstrelsy of the Scottish Border* in 1902. Despite carping at inadequacies, the editions of Scott's *Dryden,* his poetry, his fiction, and his *Minstrelsy* have not yet been supplanted.

The 1932 centenary of Scott's death initiated a decade of activity during which scholarship and popularization competed for attention. After skimming through the many bound volumes of autograph letters to Scott (then in the possession of Hugh Walpole), Wilfred Partington scooped everyone with a lively sampling of *The Private Letter-Books of Sir Walter Scott* in 1930, following this with a centenary collection plucked from the same *Sir Walter's Post-Bag.* Slower in production was the twelve-volume Centenary Edition of *The Letters of Sir Walter Scott* (1932–1937), which was magnificent in conception and hasty in execution. It gradually became apparent that Sir Herbert Grierson was not temperamentally suited to the exacting work, finished in his seventy-first year, and that his assistant editors were perhaps acquiring their skill on the job. Issuing the slow-moving volumes during the Depression, Constable would have broken off publication if Sir Alexander Grant had not provided a subsidy. Two indexes exist in manuscript, one by William M. Parker in the National Library of Scotland and the other in private hands, but both unlikely to appear because of the expense and because of the discovery of hundreds of new Scott letters since the 1930's.

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[4] My copies of Scott bibliographies by Greville Worthington (1931) and William C. Van Antwerp (1932) were also unopened when purchased nearly forty years after publication.

The first significant impact of the Scott letters was on Sir Herbert himself, who found his study of *Sir Walter Scott, Bart.* in 1938 a more congenial task than editing. The modest sub-title, "A New Life supplementary to, and corrective of, Lockhart's Biography," and a certain tameness of style won fewer readers to this finely balanced estimate than enjoyed John Buchan's life of his fellows novelist, *Sir Walter Scott* (1932).

Henderson's edition of the *Minstrelsy* was reissued in the centenary year, but Douglas's transscription of the *Journal,* because of its omissions and silent corrections, was replaced by John G. Tait and William M. Parker's revision of the text in 1939–1946. The bibliographical work then taken up has continued almost to the present, from Greville Worthington's Waverley first editions (1931), William C. Van Antwerp's collector's first editions (1932), and William Ruff's poetical works of 1796–1832 (1938) to James C. Corson's coverage of works about Scott 1797–1940 (1943) and the same authority's broader but sketchier listing in *The New Cambridge Bibliography of English Literature* (1969). In a sense, James T. Hillhouse's informative survey of *The Waverley Novels and Their Critics* of 1936 is the best kind of bibliography. But the unified and fully comprehensive Scott bibliography required by scholarship may be too demanding ever to be attempted—or completed.

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Neither 1871 nor 1932 gave a significant new direction to Scott studies, but the sixth period of heightened activity revalued Scott as a realist emerging from eighteenth-century Enlightenment, as a portrayer of tension and change,[5] and as a novelist of historical manners. Although this period was brought to a focus in the bicentenary year of 1971, it had deep roots. In his "materalistic treatment of literary history," the Hungarian critic, Georg Lukács, arrived at an open historicist interpretation of the Waverley novels. In *The Historical Novel,* which appeared in Russian in 1937, in German in 1955, and in an English version in 1962, as well as in *Studies in European Realism* (1950), this Marxist godfather of the modern rehabilitation of Scott classes Sir Walter with Goethe, Stendhal, Pushkin, and Gottfried Keller among the realists or anti-romantics. Scott's vision of history as process is innovative, moving, and true, authentically recreating the social and economic components of a most implacable "historical necessity."[6]

If Lukács is the godfather, David Daiches is certainly the father of the rehabilitation movement. In "Scott's Achievement as a Novelist" (1952) and elsewhere he persuasively argues that Sir Walter was a lover of the past but a believer in the present, a creative artist and a culture historian centrally concerned "with the transition from the age of heroic violence to the age of prudence." Out of these opposed attractions emerges that tension which quickens his best work and out of the tension, complexity, and empathy of Scott's fiction emerge the conflicting interpretations of critics.

Thematic and at times overschematic approaches to Scott come from the search for consistent patterns and progressions, for an *open sesame* to understanding, such as law or justice or property. In an impressive but arbitrary monograph, *The Hero of the Waverley Novels* (1963), Alexander Welsh arrives at a closed historical interpretation in which Scott's good, as opposed to his dark and ambiguous, heroes are passive not only because they are observers of and mediators between the forces of conservation and of disruption in society, but because they are ultimately governed in their anxieties and their loyalties by property, the basis of an ordered, law-regarding polity. To Welsh's way of thinking, this makes Sir Walter an Edmund Burke traditionalist with a suspicion of change, a writer of modified romance.

Different from the search for a unifying interpretive principle is the attitude of openmindedness in reading the Waverley novels, of willingness to recognize with Scott himself the irrational in life and to judge as one goes along without using a kit of presuppositions. A compromise between the two critical strategies, the lone thesis and the shifting base of various themes was struck by Francis R. Hart in an article on *The Fair Maid of Perth* (1964) and two years later in a book, *Scott's Novels: The Plotting of Historic Survival.* A constant is Hart's quest for "significant form," the expressiveness of content through form. Flexibility is shown in the recognition of conflict between the impulse toward humanity and the dehumanizing sway of religious and political fanaticisms, of illusions and abstractions. The hope of civilized survival may appear to change with period and place, but it remains profoundly the same.

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[5] This phrasing had become a critical commonplace by 1968 when Robin Mayhead called one section of his *Walter Scott* "Tensions in a Changing Society."

[6] Contrarily, an earlier leftist critic, William Hazlitt, finding no dynamic of sociocultural determinism in his popular contemporary, attacked Scott in 1825 as a "degraded" genius who lauded a static past and "would fain put down the SPIRIT OF THE AGE."

A modified eclecticism in which each novel, within certain limits, is allowed to suggest the laws by which it is to be judged may be found in Thomas Crawford's *Scott* of 1965, A. O. J. Cockshut's *The Achievement of Sir Walter Scott* of 1969, and the critical chapters of Edgar Johnson's *Sir Walter Scott: The Great Unknown* of 1970. What these men suggest is at times belligerently affirmed by Robert C. Gordon in *Under Which King? A Study of the Scottish Waverley Novels* (1969). If a reader cannot have both values, richness is certainly preferable to orderliness, but some larger synthesis may well include the two. For instance, seemingly disparate elements may be brought into a kind of harmony by the counterpointing of realism and romance. Although such criticism too often tends to be overgenerous to Scott's faults, I believe that the larger appreciation of the Waverley novels lies in that direction. One senses in the novels the countermovement of rationality toward acceptance of the present, toward reality, and of the imagination toward the past and its lost heroisms, toward illusion—all forming a vast circular movement which encompasses life in much of its contradiction and complexity.

In structured and in relatively free criticism of the novels, as in Jamesian and pre-Jamesian standards, the overtones of aesthetic righteousness can sometimes be heard. So too, in estimates of Scott the man, a strenuousness of loyalty or animosity seems to have roots in moral fervor, often relating to class, politics, or religion. The Laird of Abbotsford became a culture hero who easily overshadowed the Ettrick Shepherd, James Hogg, and competed with the Plowboy Poet, Robert Burns, for Scottish affection. Adulation, reprobation, and critical distortion were inevitable.

Although there were rumblings during Scott's lifetime, the controversy began with Lockhart's *Life of Scott*, which put the blame for the collapse of the writing-editing-printing-publishing venture of Scott, James and John Ballantyne, Thomas Constable, and Robert Cadell on the Ballantyne brothers. The Ballantyne trustees rebutted, Lockhart countered, Charles Dickens joined the fray in 1839, and the dispute was renewed in nineteenth-century histories of publishing houses. In our own century Donald Carswell, John Buchan, James Glen, Sir Herbert Grierson, and Edgar Johnson have tried to assess the complex evidence. Some kind of climax was reached in Eric Quayle's *The Ruin of Sir Walter Scott* (1968), which finds Scott's son-in-law to have been "an unmitigated liar and biographical scoundrel," exonerates the Ballantynes, and pronounces the weak, deceptive, land-hungry Scott guilty.[7]

I for one think the debate has gone on long enough. Sir Walter shared the failings of over-confident, undercapitalized businessmen during the post-Napoleonic boom and was disingenuous as a secret partner. Many were in the gamble together, and Scott's financial house of cards did not topple until the London firm of Hurst, Robinson & Co. went down. None emerged from this disaster more honorably than Scott, with killing labor to pay off debts and with a picturesque estate which his descendants and countless visitors to Abbotsford, increasing from 1,000 in 1833 to 64,000 in 1971, have enjoyed.[8]

Perhaps the greatest harm done by this protracted argument has been the forging of a stereotype which has lessened the novelist's stature as an artist. Discussing Lockhart's *Life* in *The London and Westminster Review* of January, 1838, Thomas Carlyle almost ineradicably stamped his sharp formulation on the critical consciousness. Sir Walter was a worlding who sold his artistic integrity for land, a bric-a-brac castle, and a laird's patrimony. The consequence was his failure to plumb character deeply, to convey a message, or to display intellect. Even in our century Carlyle looks over the shoulder of such writers as Archibald Stalker, Donald Carswell, Benedetto Croce, David Craig, Christina Keith, and John Lauber. It is true that Scott consciously ranked the creation of an ancestral estate above the creation of narrative entertainment, but it is also true that his genius went into the Waverley novels and only his talent as antiquary, collector, and progenitor into the building of Abbotsford.

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[7] The quotation is from Quayle's letter to the Editor of the *Times Literary Supplement* of March 13, 1969. (Quayle's title is reminiscent of Leslie Stephen's "The Story of Scott's Ruin," *The Cornhill Magazine* of April, 1897.)

[8] These figures appear in a helpful letter of April 4, 1972, from Mrs. Patricia Maxwell-Scott.

Not only did Lockhart's *Life* excite contention over Scott's business and literary morality, it elicited a train of questions about the biographer's frankness or suppression, about his possible sacrifice of truth to filial loyalty or to his art. The most serious erosion of Lockhart's credibility came during Grierson's work on the Centenary Edition, when Lockhart's manipulation of Scott's letters was fully exposed. Although Johnson has been more magnanimous than carping in his *Scott,* he has made Lockhart's accuracy even more suspect than did Grierson and Parker.

As in all such revisions of judgment, when the pendulum has reached one limit it begins to swing back. In a review Hart has taken issue with Johnson for asserting that Sir Walter never had a satisfactory biographer. Instead, Lockhart kept any propensity to hero worship under control and showed keen moral judgment and a willingness to accept Scott's contradictions in a vivid, articulated work of art whose chief fault was lack of "historical and documentary scrupulousness." A much fuller rehabilitation appeared only last year in Hart's monograph on *Lockhart As Romantic Biographer: A Study of Art and Truth.*[9] For the present, Lockhart may perhaps claim his former rank in British literary biography as second only to Boswell.

Carlyle's attack on Scott was resumed by Robert Louis Stevenson in an article on "Victor Hugo's Romances," written at the age of twenty-three for *The Cornhill Magazine* of August, 1874: "There never was artist more unconscious than Scott." Returning to his point in "A Gossip on Romance" (*Longman's Magazine* of November, 1882), Stevenson asserts that, despite being "a man of the finest creative instinct," Scott was "hardly a great artist; hardly, in the manful sense, an artist at all," being clumsy in style, "frequently weak," careless, and lazy. After this downgrading, further study of a non-artist might seem paradoxical. In his *Sir Walter Scott* of 1966, John Lauber declares that Scott's "work is no longer part of the living novel" and the man himself has "become purely a historical figure." Elsewhere, Lauber finds Scott so concerned with subject matter as to be indifferent to "the artistic qualities of the novel," to plot or technique.[10] Christina Keith escapes the paradox in *The Author of Waverley: A Study of the Personality of Sir Walter Scott* of 1964: "Whatever be the dust on the novels there is no dust at all on him." Carlyle's doubts about the intellectuality of the author of *Waverley* are modified by Miss Keith, who regrets that Scott's "great intellect" was not focused on his novels. Robin Mayhead, Cockshut, and Johnson, however, are fully aware of Scott's fine intellect at work in fiction.

Other questions, not significantly raised by Carlyle, are now in debate. From Lukács and V. S. Pritchett to Edgar Johnson, we have been assured that Scott is a realistic novelist. Others still look on him as a writer of romances. Lord David Cecil and more recent critics perhaps come nearer the truth when they argue that Scott combines realism with romance, which he makes complementary rather than exclusive. If romance may be associated with a feeling of heightened intensity, as Charles C. Walcutt does, then Scott introduces his readers to romantic events in romantic times and places. But he imposes rational restraints and values on these in the manner of a romantic realist.

Also in debate is Scott's belief in a changing or a changeless humanity, which has a bearing on his optimism or his pessimism. In *Romanticism and the Social Order* (1969), the English historian R. W. Harris explains that Scott adheres in *Waverley* to the eighteenth-century view of an unchanging human nature. Duncan Forbes also finds Scott a believer in a constant humanity, but to G. M. Trevelyan he is a believer in change and to John Henry Raleigh "a classic apostle of progress." Still another interpretation is that the Scott of *Ivanhoe* had changed from the Scott of *Waverley,* modifying his earlier Enlightenment certainties. It is this capacity of growth, as well as his sympathy and breadth of vision, that gives Scott's fiction what was once known as its Shakespearean quality and now, in E. M. W. Tillyard's phrase, its epicising power, a largeness of satisfaction rarely found outside of writers like Fielding and Tolstoy.

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The latest developments in the Scott revival were quickened last year, from August fifteenth to twenty-first, by the Sir Walter Scott Bicentenary Conference in Edinburgh, commemorating birth, not death. About forty scholars addressed delegates from East and West and Down Under on Scott's fiction, his poetry, manuscripts, letters, journal, biography, and cultural background, his relations to art, music, history, to foreign countries and people, to Byron, bibliography, sagas and periodicals.

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[9] The subtitle is used in the American, not in the Scottish, printing of 1971. The dating of the Preface, February, 1970, explains the lack of any comment on Johnson's *Scott* (September, 1970). This lack Hart makes up in his review, "The Romance of Apollo's Venal Son: Edgar Johnson's 'Scott,'" *Virginia Quarterly Review* **46,** **4** (Autumn, 1970): pp. 680–688, from which I quote above.

[10] "Scott on the Art of Fiction," *Studies in English Literature* **3,** **4** (August, 1963): pp. 543–554.

At the plenary session when such questions as the publication of Conference papers and of a new edition of Scott's letters were raised, the delegates ran into a besetting problem—publishers' cold feet. It now seems that between half and three-quarters of the papers will be brought out by an Edinburgh publisher and will be illustrated. The preliminary planning of a more accurate, comprehensive, and fully annotated edition of the letters has already begun at the National Library of Scotland. It will take years and the collaboration of many specialists and will be preceded by a checklist of all known correspondence to and from Sir Walter. Because of dissatisfaction with the edition of Scott's *Journal* which Tait and Parker meant to supplant the work of David Douglas, the Clarendon Press will publish next month (May) W. E. K. Anderson's more careful transcript of that great autobiographical document.

In fact, reediting is one of the major Scott activities today. Although there were fifty editions of the Waverley novels between Scott's death and 1932, no complete set has come from the press in the last forty years. A critical edition was contracted for by a publishing house, only to be abandoned after printing had begun. Readers will probably continue to accept the Dryburgh and Border editions of 1892–1894 as standard while expecting single titles to appear in Everyman's Library (edited by such authorities as Arthur M. Clark, James C. Corson, and William M. Parker) and in the Oxford English Novels series. Just last month, the Penguin *Waverley* appeared, edited by Andrew D. Hook and with a text based on Dr. Isabel Brown's work on the manuscript. Research is now going forward enthusiastically on the sources and manuscripts of Scott's creative editing and on folk literature generally. It seems likely that the *Minstrelsy of the Scottish Border*, last edited seventy years ago, will be handsomely serviced by ballad scholars and that Andrew Lang's *Scott and the Border Minstrelsy* of 1910 will be largely superseded.

As anyone could predict, dissertations on Scott are on the increase. From 1893 to 1966 Germany produced more of these apprentice pieces, too often dreary source-hunting, than any other country. The United States drew alongside in 1967 and is now leading the field with an average of three a year. Twenty different Scott projects are listed in the 1969 *Register of Scottish Literary Studies*. Post-doctoral research now in progress includes critical appraisals of the Waverley novels, studies of Scott and Byron, Scott's *Life of Napoleon Buonaparte*, Scott in Malta, and operatic versions of Scott. To my way of thinking the greatest needs in scholarship are a wise monograph on Scott as a great comic writer and the placing of Scott in a context of world literature.

The exactitude and originality of work now being done may largely be credited to universities. These centers of research have also begun sponsoring periodicals receptive to Scott, such as *Studies in Scottish Literature*, 1963– , edited by G. Ross Roy at the Texas Technological College and then at the University of South Carolina, and *Scottish Literary News*, 1970– , of the Association for Scottish Literary Studies centered at the University of Aberdeen, whose Scottish Group produces an *Annual Bibliography of Scottish Literature* (1969 on).

The renaissance of academic interest in Scotland is tardily responsive to the old complaint of cultural nationalists that English literature has excluded Scottish literature from the curriculum long enough. Glasgow University, I believe, was the first to introduce Scottish literature, and in 1969–1970 the English Literature Department of Edinburgh University, in collaboration with the School of Scottish Studies, was late in offering a year's work in Scottish literature as part of an ordinary degree in arts or of an English honours program. Registration, to quote Ian Campbell, "reflected a very limited interest in the subject." In 1972–1973 the University of Aberdeen will initiate a postgraduate course in Scottish literature from 1700 to 1832 leading to a master's degree for candidates who already have an honours degree in English or American literature.

All this seems reminiscent of the struggle decades ago to establish courses in American literature in our universities. If the Scottish drive for recognition is as successful as the American, departments or even schools of Scottish studies may be opened in England, Canada, the United States, and Down Under, and Scotland may begin exporting visiting professors. And then, if Scottish authors are better and more widely taught, general literate interest in Scott may be aroused once more. The near monopoly of Scott by scholars may thus be broken down, the chasm between the contracting popular and the expanding academic canons of his work may narrow, and my gloomy prediction about Scott's future among readers may fortunately have to be modified.[11]

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[11] It is a pleasure to acknowledge the assistance drawn from two letters of March 23 and April 11, 1972, in which Professor William Beattie brilliantly discusses past and present developments in Scott scholarship, and a long and stimulating letter of March 27 written by Dr. James C. Corson, as well as generously informative letters of March 24 and April 7 from Dr. Ian Campbell and Mr. Thomas Crawford.

COLERIDGE'S "A LIGHT IN SOUND": SCIENCE, METASCIENCE, AND POETIC IMAGINATION

MEYER HOWARD ABRAMS

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(Read April 21, 1972, in the Symposium on Wordsworth, Scott, and Coleridge)

IN THE PRINTED COPY of "The Eolian Harp" of 1797, Coleridge penciled in the margin, "This I think the most perfect poem I ever wrote"; with characteristic self-deprecation he added, "Bad may be the best perhaps."[1] Coleridge's first sentence is justified by the crucial part played by the poem not only in his own poetic development, but as the first and paradigmatic instance of the central romantic form I have elsewhere called "the greater romantic lyric" of description and meditation.

In the mid-1790's Coleridge's ambitious longer poems were in the genre he called "the sublimer Ode," in which he imitated the oracular manner and visionary matter of an earlier era when, as he said, "the Bard and the Prophet were one and the same character."[2] Writing amid the hopes and terrors engendered by the turbulent early years of the French Revolution, he had tried—emulating Milton in an earlier period of revolutionary crisis—to endow his poems with a resonant and authoritative public voice, like that of the Biblical prophets, as the sanction for a philosophical, theological, and moral frame of reference that would help his contemporaries keep their bearings in a time of dereliction and dismay. These poems included passages of eloquence, but they manifested a borrowed and unconvincing stance, ill-digested Miltonisms, and a shrill falsetto voice; as Coleridge himself commented, in the effort to dramatize and give "a poetic colouring to abstract and metaphysical truths," his poetry "is crowded and sweats beneath a heavy burthen of Ideas and Imagery! It has seldom Ease."[3]

In "The Eolian Harp" Coleridge established the presence of a private person in a localized setting, speaking with a conversational voice in a fluent blank verse that conceals the intricacy of the structure, in which the counter-movements of description and meditation form a double helix. The poem begins with a description of observed details of the outer scene, then turns inward to the play of the observing consciousness; at the same time the consciousness, freed from time and space, moves out through a sustained evolution of memory, thought, and anticipation, which is controlled throughout by the seemingly casually chosen particulars of the physical setting, rises to a climactic moment of vision beyond sense, then turns again outward and also rounds back to end where it had begun, with a recapitulation of the details of the outer scene. "The Eolian Harp" is a flawed instance of this remarkable poetic invention; there are instances of stock diction and standard moral parallels ("Meet emblems they of Innocence and Love!" "such should Wisdom be"), and the concluding verse-paragraph strikes the modern reader as a timid and ineptly managed retreat to religious orthodoxy from the bold speculation of the middle of the poem. Within a few years, however, Coleridge eliminated such weaknesses to achieve a perfection of the circuitous lyric of description and meditation in "Frost at Midnight" (1798).

The standard text of "The Eolian Harp" (reproduced at the end of this essay) is usually dated 1795, but is in fact the version that Coleridge published in his collected poems, *Sybelline Leaves,* in 1817. Between 1795 and 1817 the poem was frequently altered and supplemented so that, although it was the first of his conversation poems to be undertaken, it was the last to be completed. The final version is thus a palimpsest that can serve as an index to Coleridge's evolving thought and imagination over a period of twenty-two years —the crucial years between his early and his mature views of the world. I shall sketch the four chief stages of the poem's development; references are to the line-numbers in the standard text.

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[1] Cited by James Dykes Campbell, ed., *The Poetical Works of Samuel Taylor Coleridge* (London, 1893), p. 578.

[2] Dedication to "Ode on the Departing Year" (1796), in Ernest Hartley Coleridge, ed., *The Complete Poetical Works of Samuel Taylor Coleridge* (2 v., Oxford, 1912) 2: p. 1114.

[3] Coleridge, *Biographia Literaria,* ed. J. Shawcross (2 v., Oxford, 1907) 1, 3; *Collected Letters of Samuel Taylor Coleridge,* ed. Earl Leslie Griggs (6 v., Oxford, 1956–1971) 1: p. 137 (11 Dec., 1794).

(1) The first stage was a manuscript draft of seventeen lines entitled "Effusion 35. Clevedon, August 20th, 1795."[4] It corresponds, though with differences of detail, to the first sixteen and one-half lines of the final version. "Effusion" connoted a spontaneous expression of personal circumstances and feelings. On August 20 Coleridge was engaged to marry Sara Fricker, and the poem represents the lovers on a visit to the cottage in Somersetshire that they were about to rent as their first home. The poet is seated by the cottage at evening, his bride leaning against his arm, receptive to the light and scents and sounds of the peaceful scene. In the partly opened window they place that favorite romantic musical instrument, a wind harp—that is, an oblong sounding box whose strings, in response to the variable touch of the breeze, vibrate into chords of altering pitch and loudness. The lover's consciousness invests the relations of the casement and the harp, the harp and the circumambient breeze, with the posture, languor, and guile of the erotic dalliance between the human couple. In the final rendering of these lines:

> And that simplest Lute,
> Placed length-ways in the clasping casement, hark!
> How by the desultory breeze caress'd
> Like some coy maid half yielding to her lover,
> It pours such sweet upbraiding, as must needs
> Tempt to repeat the wrong!

(2) The second chief stage was the first published version in Coleridge's *Poems on Various Subjects* of 1796. Although still called an "Effusion," the poem has been developed into an obviously artful construction of fifty-six lines; it corresponds to all of the final text except that it lacks the passage, lines 26–33. This version is the one that justifies the usual description of "The Eolian Harp" as a wedding or honeymoon poem: Coleridge and Sara, having been married on October 4, 1795, are now living in the cottage at Clevedon.[5] Taking up where the earlier manuscript left off, Coleridge first continues the earlier sexual imagery (the sounds, at the bolder importunities of the masculine wind, "Over delicious surges sink and rise"), then introduces a descriptive tour-de-force wherein the witchery of nature's music transforms, to the musing mind, the sights and odors and sounds of this world into a fantasy of "Fairy-Land" or (the subsequent imagery suggests) of an exotic paradise,

> Where Melodies round honey-dropping flowers,
> Footless and wild, like birds of Paradise,
> Nor pause, nor perch, hovering on untam'd wing!

The poet's meditation now shifts (line 34) to recall recurrent occasions in which—not at evening and in the company of the beloved, but alone and while resting from his work at high noon—he lies stretched out on a nearby hillside, watching the dance of sunlight on the sea. In this remembered situation the presently perceived wind-harp remains the vehicle of the metaphoric process of thought, but the poet, when musing in solitude, is preoccupied not with love but with metaphysics. First the sounds of the harp (lines 39–43) become the analogue for the fantasies that, random and various as the breeze, "Traverse my indolent and passive brain." Then, in a sudden focus of the random thoughts, the harp modulates into a radical image for the consciousness of all living things, responding with the music of thought to one divine and all-informing breeze:

> And what if all of animated nature
> Be but organic Harps diversely fram'd
> That tremble into thought, as o'er them sweeps
> Plastic and vast, one intellectual breeze,
> At once the Soul of each, and God of all?

The term "plastic" for a formative and organizing principle within nature—derived from Ralph Cudworth and other seventeenth-century Neoplatonists—was widely used in the 1790's, and Coleridge suggested in several other poems written at the time of "The Eolian Harp" that there is in nature an indwelling cause of the organization and consciousness of all individual existents.[6] But he always expressed this concept in a guarded way, and in "The Eolian Harp" he presents it in the mode of a hypothetical question. Even in this form it turns out to be too bold, for even more than in his contemporary poems, it opens up a possibility that filled Coleridge with metaphysical terror: the world-view he called "Pantheism." That is, the passage threatens to absorb a transcendent and personal Creator of the world, without remainder, into an indwelling Soul of Nature, the *Pneuma* or *Spiritus Sacer* or *Anima Mundi* of the Stoics and Neoplatonists, which informs all the material universe and constitutes all modes of consciousness. Furthermore, as in the pagan philosophers who had taken the terms *pneuma*, *spiritus*, and *anima* in the literal sense of breeze or breath, Coleridge's "intellectual breeze" even suggests a regressive form of the religion of Nature in which the unifying presence is a sacred wind or divine breath.[7] The poet therefore represents his hypothetical speculation as having been spoken aloud, so that Sara—the voice of domestic Christian piety, a dramatized aspect of Coleridge's own divided mind—may dispraise such philosophy as "shapings of the unregenerate mind." The lyric speaker precipitately retracts the analogy and instead acknowledges his faith in a Christian Deity capable of yielding, to a sinful and miserable man, a grace beyond his deserts. The listing of these gifts in the concluding line closes the circle of the poem by repeating, in reverse order, the descriptive details of the beginning: "Peace, and this Cot, and thee, heart-honour'd Maid"—ending thus with the "pensive Sara" addressed in the opening phrase.

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[4] This poem is printed from the manuscript at Rugby School in *The Poetical Works*, ed. E. H. Coleridge, **2**: p. 1021. The editor also prints a transcript of a MS draft of "The Eolian Harp" written in 1797 (**2**: pp. 1021–1023).

[5] This poem was written in the period of love and happiness between Coleridge's at first reluctant courtship and his stormy family life. As he wrote to his close friend Thomas Poole on October 7, 1795, in a passage closely related to details of the poem:

"On Sunday morning I was *married* . . . united to the woman, whom I love best of all created Beings.—We are settled—nay—quite domesticated at Clevedon—Our comfortable Cot!—! . . . The prospect around us is perhaps more *various* than any in the kingdom—Mine Eye gluttonizes.—The Sea—the distant Islands!—the opposite Coasts!—I shall assuredly write Rhymes—let the nine Muses prevent it, if they can—."
(*Collected Letters* **1**: p. 160; see also **1**: p. 164).

(3) Except that it dropped "Effusion" from the title, Coleridge's *Poems* of 1797 reproduced the version published in 1796. Coleridge introduced the third major change six years later, in his *Poems* of 1803. Here he deleted lines 21–25—the comparison of the music of the wind harp to the sound of twilight elfins[8]—in order to move directly from the relationship of the two human lovers, as imaged in the erotic interplay between breeze and harp, to an encompassing love that relates the poet to all things in a world where even the silent air is potential music. In the original version of this inserted passage:

> Methinks it should have been impossible
> Not to love all things in a World like this,
> Where e'en the Breezes of the simple Air
> Possess the power and Spirit of Melody!

(4) The fourth important change completes the poem as we have it now. In his collected poetry of 1817, *Sybelline Leaves*, Coleridge for the first time entitled the poem "The Eolian Harp." He restored the lines on fairy-land and the birds of paradise which he had dropped from the preceding edition, letting them stand between the passage on human love and that on the love for all things. Then, after he had finished correcting the proofs for *Sybelline Leaves*, Coleridge sent the printer a list of Errata in which he included, for insertion immediately after the lines on the birds of paradise, a new quatrain, together with a version of the succeeding passage on the love for all things which he had revised so as to accord with these four new lines. The total insertion, which I reproduce as it was printed in the Errata, constitutes lines 26–33 of the final text:

O! the one Life, within us and abroad,
Which meets all Motion and becomes its soul,
A Light in Sound, a sound-like power in Light,
Rhythm in all Thought, and Joyance every where—
Methinks, it should have been impossible
Not to love all things in a world so fill'd,
Where the breeze warbles and the mute still Air
Is Music slumbering on its instrument!

"O! the one Life. . . ." The exclamation introduces a moment of vision that every reader feels to be the imaginative climax of the poem. These lines, however, in T. S. Eliot's phrase, communicate before they are understood. In the confidence that they will communicate more subtly and richly after they are understood—and also that to understand them is to understand what is most distinctive in Coleridge's mature thought and imagination—I shall undertake to explicate the passage by seeking answers to four questions:

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[6] H. W. Piper, *The Active Universe: Pantheism and the Concept of Imagination in the English Romantic Poets* (London, 1962), pp. 43–46. For related passages of verse written by Coleridge in the mid-90's, see "Religious Musings," ll. 402–408; "The Destiny of Nations," ll. 36–49, and the earlier draft of this work in *Complete Poetical Works*, **2**: p. 1025.

[7] See M. H. Abrams, "The Correspondent Breeze: A Romantic Metaphor," in Abrams, ed., *English Romantic Poets: Modern Essays in Criticism* (New York, 1960), pp. 44–46. A detailed account of Coleridge's long struggle with Pantheism is Thomas McFarland, *Coleridge and the Pantheist Tradition* (Oxford, 1969).

[8] Coleridge had made an unsuccessful attempt to get his printer to delete the passage on fairy-land and the birds of paradise from the preceding version in the *Poems* of 1797; see George Whalley, "Coleridge and Southey in Bristol, 1795," *Review of English Studies*, new ser., **1** (1950): p. 332n.

What did Coleridge mean by his allusion to "A light in sound, a sound-like power in light"? How is this allusion related to "the one Life within us and abroad / Which meets all motion"? In what way does the insight into a light in sound justify the sense of "Joyance every where"? And what has this entire complex of a light in sound, the one Life, and universal joyance to do with the relation between the human lovers that precedes it and the culminating love for all things that follows it?

Exploration of the conceptual scheme that underlies this passage involves Coleridge's views about Newton's *Opticks,* Newton's scientific methods and theories, and the post-Newtonian world picture; the new metaphysical system that Coleridge constructed on the basis of his reading in Friedrich von Schelling and other German *Naturphilosophen;* concepts that he found in Jacob Boehme and other esoteric thinkers; as well as his interpretation of the Biblical accounts of the creation and the Incarnation; so that I must be very selective. But even a cursory survey of the cognitive infra-structure of the imaginative moment expressed in these eight lines will indicate that they implicate a much heavier "burthen of ideas" than that under which his early bardic poems had sweated and strained. Coleridge lamented repeatedly that metaphysics and "abstruse thought," to which he had turned for refuge from personal disasters, had depressed or destroyed his power of poetry. Unwanted "metaphysical trains of thought," he wrote in a letter to Sotheby,

> when I wished to write a poem, beat up Game of far other kind—instead of a Covey of poetic Partridges with whirring wings of music . . . up came a metaphysical Bustard, urging it's slow, heavy, laborious, earth-skimming Flight, over dreary & level Wastes.

But less than a week earlier Coleridge had also insisted to the same correspondent that "a great Poet must be, implicitè if not explicitè, a profound Metaphysician. He may not have it in logical coherence. . . . But he must have it by *Tact.* . . ."[9] It is because, in the passage of "The Eolian Harp" which is our concern, the burthen of ideas remains largely implicit within the imaginative insight it generated and supported that Coleridge is able to write philosophical poetry with the ease he had earlier sought and here supremely achieved.

I. A LIGHT IN SOUND

What are we to make of the mysterious reference to "A light in sound, a sound-like power in light"? The figures, technically, are oxymorons, and have usually been interpreted as alluding to synesthesia—the phenomenon in which the stimulation of one sense evokes a response involving a different sense. There had during the preceding century been intense interest, among poets and critics as well as philosophers, in such intersensory phenomena, stimulated in part by Newton's analogies in his *Opticks* between the propagation of light and of sound and between the perception of harmony and discord in musical tones and in colors.[10] Coleridge shared this interest in what he called in the *Biographia Literaria* "the *vestigia communia* of the senses, the latency of all in each, and more especially . . . the excitement of vision by sound,"[11] and the line "a light in sound" may include the suggestion of such a vestigial commonsensorium as an instance of the universal "latency of all in each" that leads to the poet's invocation of the one Life. But Coleridge's orbit of reference in this line is much wider than the psychology of sense-perception, for it involves a total metaphysic of the constitution of the material universe, of the nature of life, and of the relation of the mind to the universe it perceives.

The quatrain of "The Eolian Harp" on a light in sound was added in a list of Errata to *Sybelline Leaves* that Coleridge composed no earlier than the spring of 1816, and possibly as late as the spring of 1817.[12] This places the writing of the quatrain squarely in the middle of the remarkable span of four years or so when, in a sudden burst of intellectual activity, Coleridge composed his most important works on philosophy and science, including the *Biographia Literaria*, the *Theory of Life*, his two *Lay Sermons*, his radically revised and enlarged version of *The Friend*, and the series of *Philosophical Lectures* that he delivered between December, 1818, and March, 1819.[13] All these works contain passages relevant to Coleridge's theories of the relations between light, sound, and life, and I shall later cite some of them. Most immediately pertinent and revealing, however, are a series of philosophical letters that Coleridge wrote between November, 1816, and January, 1818[14]—that is, during and soon after the time when he composed the Errata—which show that he was almost obsessively preoccupied with the ideas that underlie the passage added to "The Eolian Harp."

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[9] *Collected Letters,* to William Sotheby, 19 July, 1802, 2: p. 814; 13 July, 1802, 2: p. 810. Coleridge wrote to Wordsworth on 3 July, 1803: You are "a great Poet by inspirations, & in the Moments of revelation, but . . . a thinking feeling Philosopher habitually . . ." (*ibid.,* p. 957).

[10] Erika von Erhardt-Siebold, "Harmony of the Senses in English, German, and French Romanticism," *Publ. Mod. Lang. Assn.* **47** (1932): pp. 577–592; Marjorie Nicolson, *Newton Demands the Muse* (Princeton, 1946), chap. 4. For the association of synesthetic experience with the music of the Eolian harp, see Glenn O'Malley, "Shelley's 'Air-Prism,'" *Modern Philology* **55** (1958): pp. 181–182.

[11] *Biographia Literaria* **2**: p. 103. See also Coleridge's letter of 1801, in which he expressed his intention "to evolve all the five senses, that is, to deduce them from *one sense* . . ." (*Collected Letters* **2**: p. 706).

[12] On February 10, 1816, Coleridge returned to his publisher, John Gutch of Bristol, the signatures of the proofsheets of *Sybelline Leaves* that included "The Eolian Harp" (*Collected Letters* **4**: p. 621, notes 2 and 3). On June 6, 1816, he wrote to Gutch that he will need to send him "a very long List" of Errata; and on June 14 he wrote a note to the printer, on the revised proof-sheets

Thus, Coleridge wrote to Ludwig Tieck on July 4, 1817, a few weeks before the *Sybelline Leaves* was issued, that the position taken by Newton in his *Opticks* that *"a Ray* of Light" is a *"Thing,"* "a physical *synodical Individuum,"* and that "the Prism is a mere mechanic Dissector" of "this complex yet divisible Ray," had always appeared to him "monstrous FICTIONS!" Instead he put forward the view—adopted, he said, "probably from Behmen's Aurora, which I had *conjured over* at School"—"that Sound was = Light under the praepotence of Gravitation, and Color = Gravitation under the praepotence of Light."[15] Above all, two letters that Coleridge wrote shortly thereafter to the Swedenborgian, C. A. Tulk, provide decisive clues not only to the line about light and sound but also (as we shall see) to the entire passage we are scrutinizing. In the first letter, written two months after the publication of *Sybelline Leaves*, Coleridge declared that "the two Poles of the material Universe are . . . Light and Gravitation. . . . The Life of Nature consists in the tendency of the Poles to re-unite, and to find themselves in the re-union." Then:

> Color is Gravitation under the power of Light . . . while Sound on the other hand is Light under the power or paramountcy of Gravitation. Hence the analogies of Sound to Light. . . .[16]

"A light in sound, a sound-like power in light"—we find in these letters references to the light, sound, and power alluded to in this line, and to the analogies that the line suggests between sound and light, as well as an indicated relation between these matters and life—"the Life of Nature." But what has all this to do with gravitation, the deficiencies of Newton's theory of light, and the polarity of the material universe, and what are we to make of "praepotence"? At first sight these passages, instead of explaining the mystery of a light in sound, seem to wrap it in an enigma. To explain in turn this enigma, we need to glance at some elements in the world-view that Coleridge was evolving in the period 1815–1818.

Coleridge's reference of his views on light and sound to Boehme's *Aurora*, it will appear later, has substantial grounds, but it is misleading nonetheless. Coleridge's immediate precedents for the particular terms and metaphysical constructions in these letters were the writings of the contemporary philosopher Friedrich Schelling and, to a lesser extent, the writings of Schelling's fellow-workers in *Naturphilosophie*, especially Heinrich Steffens.[17] He had begun to study Schelling in-

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of the final signature of *Sybelline Leaves*, that "I shall send a List of the Errata" (*ibid.*, p. 645 and note 2). Then, on May 22, 1817, he wrote in a letter to Thomas Curtis—the London printer for Gale and Fenner, to whom Coleridge had transferred the publishing of *Sybelline Leaves* and *Biographia Literaria*—that "the Day after tomorrow" he would visit him "& bring with me all that remains for me to do with regard to the Literary Life & the Sybelline Leaves—Errata &c." (*ibid.*, p. 734). Professor Earl Leslie Griggs has written to me that the Errata are printed on the type of paper used by the London rather than the Bristol printer. It is possible, then, that the Errata (including the additional passage for "The Eolian Harp") were not composed until May, 1817.

I am indebted to Professor Griggs for private correspondence on this matter, as well as for the superb editorial work throughout his edition of Coleridge's *Collected Letters*.

[13] See Griggs, ed., *Collected Letters* 5: "Introduction," p. lvi. Griggs's Index to the *Letters* makes it possible to determine the dates during which Coleridge was working on each of these items.

[14] To James Gillman, 10 Nov., 1816; to Ludwig Tieck, 4 July, 1817; to Lord Liverpool, 28 July, 1817; to C. A. Tulk, Sept., 1817, and, again, 12 Jan., 1818.

[15] *Collected Letters* 4: pp. 750–751.

[16] To Tulk, Sept., 1817, *ibid.*, pp. 771, 773. (*Sybelline Leaves* had been issued by 22 July, 1817; see *ibid.*, p. 754, n. 1.) In the second letter to Tulk, 12 Jan., 1818, Coleridge said again: "Sound is to Light what Color is to Gravity—viz. Sound = Light under the predominance of Gravity: Color = Gravity under the predominance or, as it were, the Dynasty of Light" (*ibid.*, p. 807).

[17] For a balanced estimate of the complex relations of Coleridge's thought of this period both to Boehme and to Schelling, see Richard Haven, *Patterns of Consciousness*:

tensively at about 1808—his burst of philosophical activity in the 1810's is, in considerable part, a result of the exciting possibilities that Schelling's thought opened out to him. For the sake of brevity I shall attend mainly to Coleridge's own views, with only an occasional glance at the German formulations that he adopted but altered to accord with his prior interests and speculations. Our investigation leads us to the center of Coleridge's philosophy of nature. This is an area of his thought that, until very recently, scholars have either discreetly overlooked or else—assessing it as an attempt to achieve by free fantasy what scientists discover by patient experiment—have rejected as "mere abracadabra," "a bizarre farrago of pretentious nonsense." [18] Such judgments are inevitable if we simply apply to Coleridge's scheme of nature the criteria of the philosophical positivism that Coleridge's scheme was specifically intended to dispossess. If our intent, on the other hand, is not to dismiss but to understand an important development in nineteenth-century intellectual history, then we can do no better than to emulate Coleridge's own procedure, which John Stuart Mill found to be so intellectually liberating. Mill pointed out that by Bentham (the great philosophical positivist of his time), men have been led to ask of an opinion, "Is it true?" By Coleridge, they have been led to ask "What is the meaning of it?" and to answer this question by trying to look at the opinion "from within."

> The long duration of a belief, [Coleridge] thought, is at least proof of an adaptation in it to some portion or other of the human mind; and if, on digging down to the root, we do not find, as is generally the case, some truth, we shall find some natural want or requirement of human nature which the doctrine in question is fitted to satisfy.[19]

Let us then take Coleridge's vision of nature seriously and try to look at it from within, to see what it undertook to accomplish and what natural want it served to satisfy.

Coleridge's aim was not to replace experimental science by speculative science, but instead to develop a counter-metaphysic to the metaphysical foundations of modern science; his philosophy of nature, in short, was not science, nor anti-science, but metascience. By the reference, in his letter to Tieck, to Newton's "monstrous fictions" in the *Opticks,* he did not mean to oppugn Newton as an experimental physicist, to whose procedures and discoveries he paid spacious tribute.[20] His objection was to Newton as a man whose prestige as a physicist had given impetus to a metaphysics that, in Coleridge's view, permeated and vitiated all areas of thought and culture in the eighteenth century, "the Epoch of the Understanding and the Senses" [21] in philosophy, psychology, politics, religion, and the arts. For despite his reluctance to feign hypotheses, Newton had proposed, in the "Queries" he added to his *Opticks,* that rays of light are "corpuscular," that is, "very small Bodies emitted from shining Substances," and that these bodies in motion excite "Waves of Vibrations, or Tremors" in a hypothetical "aether." This aether, although very "rare and subtile" is nonetheless a material medium that pervades, in varying densities, both space and bodies and serves to explain not only the action at a distance both of light and gravity, but also the refraction and reflection of light, as well as the propagation of light and sound from the eye and ear through the nerves "into the place of Sensation" where they are converted into sight and hearing.[22]

An Essay on Coleridge (University of Massachusetts Press, 1969), pp. 89–96, 134–142. On the relations of Coleridge's philosophy to Schelling, the fullest treatment is by G. N. G. Orsini, *Coleridge and German Idealism* (Carbondale and Edwardsville, Illinois, 1969), chap. 8 and 9.

[18] Joseph Warren Beach, "Coleridge's Borrowings from the German," *English Literary History* **9** (1942): pp. 38n., 50.

[19] *Mill on Bentham and Coleridge,* ed. F. R. Leavis (London, 1950), pp. 99–100. For Coleridge's own statements on this subject see *Collected Letters* **1**: p. 398; *Biographia Literaria* **1**: pp. 161–162, 169–170; and *The Table Talk* (London, 1917), p. 157 (12 Sept., 1831).

[20] For Coleridge's lifelong interest in experimental science, together with a collection of his representative judgments on Newton—who as physicist was "the immortal Newton" whose "ethereal intuition" revealed "the constructive principle of the material universe"—see Roberta Florence Brinkley, ed., *Coleridge on the Seventeenth Century* (Duke University Press, 1955), pp. 393–408; also *The Statesman's Manual,* in *Lay Sermons* (London, 1852), pp. 57–58, 90. As early as 23 Mar., 1801, when he began to study Newton's *Opticks,* Coleridge wrote that he was "exceedingly delighted with the beauty & neatness of his experiments, & with the accuracy of his *immediate* Deductions from them," but that his opinions and theories "founded on these Deductions" were so superficial as "to be deemed false" (*Collected Letters* **2**: p. 709).

[21] Written by Coleridge on the flyleaf of a copy of *The Friend* (1818), ed. Barbara E. Rooke (2 v., London, 1969) **1**: p. 203n. See *Collected Letters* **4**: pp. 759, 956.

[22] Newton, *Opticks* (4th edition), ed. I. Bernard Cohen and others (New York, 1952), Query 29, p. 370, and Queries 17–23, pp. 347–353.

This procedure, Coleridge argues, sets up a logical regress, since it undertakes to solve "Phaenomena by Phaenomena that immediately become part of the Problem to be solved." [23] Worse still, Newton in his famed thirty-first Query had put forward the stark image of a universe whose ultimate elements are indivisible particles of matter capable of motion:

> It seems probable to me, that God in the Beginning form'd Matter in solid, massy, hard, impenetrable, moveable Particles, of such Sizes and Figures, and with such other Properties, and in such Proportion to Space, as most conduced to the End for which he form'd them. . . .[24]

And as ultimate reality is thus reduced to masses and motion—for the simple reason that these are the only things that the highly specialized techniques of physical science are capable of managing mathematically—so the Creator of this reality is reconstrued to accord with such a postulated creation. That is, Newton's God is represented as the omnipresent mover of all particles, and also as the infallible seer of the particles in themselves that we are able to see only after they have been translated into the "images" formed by the sense through the intermediation of rays of light. God, Newton says, is "a powerful ever-living Agent, who being in all Places, is . . . able by his Will to move the Bodies within his boundless uniform Sensorium"; he is also the Being

> who in infinite Space, as it were in his Sensory, sees the things themselves intimately . . . wholly by their immediate presence to himself: Of which things the Images only carried through the Organs of Sense into our little Sensoriums, are there seen and beheld by that which in us perceives and thinks.[25]

"Sir Isaac Newton's Deity," Coleridge drily remarked, "seems to be alternately operose and indolent," for he undertakes to do everything, yet delegates so much power to "Vice-regent second causes" as "to make it inconceivable what he can have reserved." [26]

Newton's move, as Coleridge saw it, was an immense extrapolation of a working fiction of physical science—what we now call a "conceptual model"—into a picture of the actual constitution of the universe. The "Mechanic or Corpuscular Scheme," Coleridge said, "in order to submit the various phenomena of moving bodies to geometrical construction," had to abstract "from corporeal substance all its *positive* properties," leaving it only "figure and mobility. And as a *fiction of science*, it would be difficult to overvalue this invention." But Descartes and later thinkers "propounded it as *truth of fact:* and instead of a World *created* and filled with productive forces by the Almighty *Fiat*, left a lifeless Machine whirled about by the dust of its own Grinding. . . ." [27]

To Coleridge this view of the ultimate structure of reality was both incredible to human experience of the world and intolerable to human needs. As no more than a drastic subtraction from the rich diversity of sense-phenomena, it remains itself phenomenal, the product of what Coleridge repeatedly described as a "slavery" to the senses, especially to the eye. The "needlepoint pinshead System of the *Atomists*" was a fictional product of that "slavery to the eye" which reduces "the conceivable . . . within the bounds of the *picturable*," and excludes "all modes of existence which the theorist cannot in imagination, at least, *finger* and *peep* at!" [28] Against this world-picture, in the literal sense of "picture" as something that can be visualized, Coleridge again and again brings the charge that it is, precisely speaking, lethal. It has killed the living and habitable world of ordinary experience, as well as the metaphysical world of the pre-Cartesian and pre-Newtonian past, in which the mind of man had recognized an analogon to itself and to its life, purposes, sentiments, values, and needs; a world, therefore, in which man was a participant and could feel thoroughly at home. By the translation of the "scientific calculus" from a profitable fiction into ontology, Coleridge claimed in 1817, "a few brilliant discoveries have been dearly purchased at the loss of all communion with life and the spirit of Nature." And against this "philosophy of death," which leaves only the "relations of unproductive particles to each other," he posed his own philosophy of life, in which "the two component counter-powers actually interpenetrate each other, and generate a higher third, including both the former. . . ."[29]

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[23] To C. A. Tulk, 12 Jan., 1818, *Collected Letters* 4: p. 809. *Cf. The Friend* 1: p. 500: "The solution of Phaenomena can never be derived from Phaenomena."

[24] *Opticks*, Query 31, p. 400.

[25] *Opticks*, Query 31, p. 403; Query 28, p. 370. See also Newton's "General Scholium" to the *Principia*.

[26] Note to Southey's *Joan of Arc*, in *Poetical Works*, ed. E. H. Coleridge, 2: p. 1113.

[27] Coleridge, *Aids to Reflection* (London, 1913), "Conclusion," pp. 268–269; see also his *Philosophical Lectures*, ed. Kathleen Coburn (New York, 1949), pp. 356 ff. On Schelling's analysis of the atomistic and mechanical theory as "empirical fictions," or a "picture speech [*Bildersprache*] which is valid only inside its determinate bounds," see his *Ideen zu einer Philosophie der Natur* (1797), in *Sämmtlich Werke*, ed. K. F. A. Schelling, *Erste Abteilung* (10 v., Stuttgart and Augsburg, 1856–1861) 2: pp. 70, 99–100.

[28] *The Notebooks of Samuel Taylor Coleridge*, ed. Kathleen Coburn (New York, 1957 ff.) 2, No. 3159; *Biographia Literaria* 1: p. 189; *Hints towards the . . . Theory of Life*, ed. Seth B. Watson (London, 1848), pp. 45, 58. See also to Lord Liverpool, 28 July, 1817, *Collected Letters* 4: 758–759.

That is, in radical opposition to the picture of a world composed of particles of matter in motion, to whose impact an alien mind is passively receptive, Coleridge sets up what, following Schelling, he calls a "vital," or "dynamic," or "constructive" philosophy. The elements of this philosophy are not moving material particles but inherent energies, or "powers," that polarize into positive and negative "forces" (also called "thesis and antithesis") which operate according to "the universal Law of Polarity or essential Dualism."[30] By this Coleridge means that the generative and sustaining elements of his universe exist only relatively to each other and manifest an irremissive tendency on the one hand to oppose themselves and on the other hand to reunite. These powers and forces are not physical or phenomenal, but metascientific and pre-phenomenal elements (in Coleridge's terms, they are not "real" but "ideal"), hence they cannot be pictured, but only imagined; they do, however, within the phenomenal world which they bring into being, have especially close and revealing analogues that Coleridge calls their "exponents." It is only by their "living and generative interpenetration," or "synthesis," that the polar powers and forces achieve the condition of matter, and so move into the phenomenal realm available to the senses. "In all pure phaenomena," Coleridge says, "we behold only the copula, the balance or indifference of opposite energies," and "matter" is to be considered "a Product—coagulum spiritûs, the pause, by interpenetration of opposite energies."[31]

We are at length ready to turn back to Coleridge's enigmatic statement, in his letter to C. A. Tulk of September, 1817, that "Color is Gravitation under the power of Light . . . while Sound on the other hand is Light under the power or paramountcy of Gravitation." "The two Poles of the material Universe," Coleridge there says, are "Light and Gravitation." Or as he wrote in a manuscript note:

> Well then, I say that all Powers may be reduced, in the first instance, into
> Light & Gravity.
> But each of these beget two other powers. Under Gravity we place Attraction and Repulsion: and under Light the Powers of Contraction and Dilation. . . .[32]

That is, the two elemental counter-powers that generate the cosmos he calls "light" and "gravity." These are not the light we see nor the weight, or gravitational force, we feel; they exist on a different ontological plane as "speculative" or "ideal" powers of which phenomenal light and weight serve as the closest "exponents" in experience. Each of these two powers evolves two counter-forces, constituting a quadrant of forces that Coleridge represents graphically as a North-South line crossed by an East-West line: gravity involves a pull in and its opposite, a push out, while light pulses radially in all directions and at the same time contracts back to its center. The continuous and incremental syntheses of the two counter-powers of gravity and light constitute the material elements and bodies of everything that exists. The innumerable qualitative differences among existing things, hence among the phenomena perceived by the senses, are determined by which of these two elemental powers—at any given level of their synthesis—is "predominant," in a range of ratios that extends from the extreme predominance of gravity, through a mid-point of "indifference" or "neutralization" between the two powers, to the extreme predominance of light. "That a thing *is*," as Coleridge puts it, "is owing to the co-inherence therein of any two powers; but that it is *that* particular thing arises from the proportions in which these powers are co-present, either as predominance or as reciprocal neutralization. . . . "[33] (For "predominance," Coleridge elsewhere uses the alternative expressions "praepotence," "dynasty," "under the power of," or "paramountcy.")

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[29] To Lord Liverpool, *Collected Letters* **4**: pp. 760–761; *The Statesman's Manual*, pp. 94–95; see also p. 105.

[30] *The Friend* **1**: p. 94n; and see *Collected Letters* **6**: p. 601.

[31] *The Statesman's Manual*, p. 95; to Lord Liverpool, *Collected Letters* **4**: p. 760; to C. A. Tulk, *ibid.*, p. 775. On details of Coleridge's metascience in this period see the pioneering study by Craig W. Miller, "Coleridge's Concept of Nature," *Jour. History of Ideas* **25** (1964): pp. 77–96. A lucid and comprehensive treatment of the role of these ideas in the various areas of Coleridge's mature thinking is Owen Barfield's *What Coleridge Thought* (Middletown, Conn., 1971).

[32] From a manuscript quoted by Barfield, *What Coleridge Thought*, p. 141. Compare this to the related, but in many details different, scheme in Schelling's *Von der Weltseele* (1798), *Sämmtliche Werke* **2**: pp. 357 ff., "On the Relation of the Real and Ideal in Nature, or Development of the First Axioms of the Philosophy of Nature, on the Principles of Gravity and of Light"; also, *Darstellung Meines Systems der Philosophie* (1801) **4**: pp. 146 ff. On Schelling's distinction between phenomenal and non-phenomenal light and gravity, see *Sämmtliche Werke* **3**: pp. 133–136; **4**: pp. 43–47. In *Collected Letters* **6**: p. 900, Coleridge stresses "the blunder of taking *Light*, not as a Power, but as a phaenomenon. . . ."

The metaphysical enigma has, I trust, become transparent enough so that we can look through it at the initial mystery of "The Eolian Harp," line 28: "A light in sound, a sound-like power in light." Seated in close communion with his bride and luxuriously open to the light and color and sounds of the outer world, the poet, by a leap of imagination, achieves insight to the common pre-phenomenal powers of which all these phenomena are exponents, and so apprehends the unity within their qualitative diversity—sounds that incorporate the elemental counter-power of light, and light that, appearing as color, incorporates the elemental counter-power of gravity. For as we have seen, the power of gravitation, when predominant over the "co-present" power of light, manifests itself to the senses as sound, and when subordinate to light, manifests itself to the senses as color.

II. THE ONE LIFE

In what Coleridge called his "speculative," as opposed to "empirical," science of nature and life, he "constructs" (in the sense of rendering intelligible by reference to a single genetic principle) the total universe. Driven by their inherent stresses of opposition-in-unity, and manifesting in the struggle diverse degrees of relative "predominance," the powers of light and gravity evolve, by the progressive synthesis of prior syntheses, through the several distinctive orders of organization that Coleridge, following Schelling, calls "potences."[34] At each level of organization, entities are linked by correspondences—according to an equivalence in the predominance of light or gravity—to entities on all other levels. On the first level of potence we get magnetism, electricity, and galvanism (which to Coleridge includes chemical combination), then all the forms of the inorganic world, then the forms of the organic world of plants and animals up to the highest stage of organic life, man; at which point mind, or "consciousness," emerges. This culminating achievement is a radical break-through in the developmental process, for consciousness is capable of a reflex act by which—in a continuing manifestation of "the universal Law of Polarity" whereby it counterposes, in order to reconcile, the outer world as "object" to itself as "subject"[35]—it re-engenders as knowledge the natural world within which it has itself been engendered, and of which it remains an integral part. Thus man's mind closes the evolutionary circle of polar generation by the powers of light and gravitation, the human and the non-human world merging at the focal point of consciousness.

We come to the moment in line 26 of "The Eolian Harp"—"O! the one Life within us and abroad!" Coleridge's preoccupation with the one Life as a truth manifested in highest human experience, but alien to the post-Newtonian world-picture, goes back long before 1816 or 1817 when he added this passage to the poem. As early as 1802, for example, he had written to Sotheby that Nature will have her proper interest only to him "who believes & feels, that every Thing has a Life of its own, & that we are all *one Life*." In the Hebrew Psalmists, unlike the mythological poets among the Greeks, you find "genuine Imagination."

> In the Hebrew Poets each Thing has a Life of it's own, & yet they are all one Life. In God they move & live, & *have* their Being—not *had*, as the cold System of Newtonian Theology represents, but *have*.[36]

And in the conversation poems that Coleridge wrote within several years after the 1796 version of "The Eolian Harp," the climax of each meditation on a landscape had been a moment of insight—the sudden awareness of a single Presence behind and within the phenomena of sense. In all these early poems, however, the visionary moment had been described in terms that had long been traditional. In "The Eolian Harp" of 1796, the poet tentatively put forward a latter-day version of the Stoic World-Soul—"one intellectual breeze"—as the principle that makes all animated nature "tremble into thought." In other conversation poems the poet found "religious meanings in the forms of nature!" or discovered that nature was an orthodox "Temple" built by "God" and that the diversified landscape "seem'd like Omnipresence!"; or else the landscape manifested itself to be God's veiled self-revelation,

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[33] *The Theory of Life*, p. 69; compare p. 58. See also to James Gillman, *Collected Letters* **4**: p. 690, and to C. A. Tulk, *ibid.*, p. 808. For Schelling on the role of preponderance [Übergewicht] between polar forces, see *Sämmtliche Werke* **3**: pp. 314 ff.; **7**: pp. 178, 244, 452; and on the intuition of the unity of all things in their common elements of gravity and light, see **2**: pp. 342–343.

[34] See *Biographia Literaria* **1**: p. 189, and the comment on "potence" by Orsini, *Coleridge and German Idealism*, p. 234.

[35] *Biographia Literaria* **1**: pp. 173–188: for the description of human perception as a "repetition" of "the eternal act of creation," see p. 202.

[36] *Collected Letters* **2**: pp. 864–866; the Biblical echo is from Acts 17.28. See also *Collected Letters* **1**: pp. 349–350, 397–398; **2**: pp. 893, 916.

> of such hues
> As veil the Almighty Spirit, when yet he makes
> Spirits perceive his presence;

or (in the concept that had persisted from early Christian exegetes through Bishop Berkeley) the objects and aspects of the landscape were recognized to be *verba visibilia* in God's Book of Nature,

> The lovely shapes and sounds intelligible
> Of that eternal language which thy God
> Utters. . . .[37]

Now, some fifteen years later, the metascience of nature that Coleridge had evolved from German *Naturphilosophie* provided him with a full and detailed conceptual structure to support and articulate his earlier intuitions. In this scheme, in which all matter and spirit are generated by the interplay of the same elemental powers, there is no gap between the living and lifeless, nature and man, or matter and mind, but only a distinction of levels of organization. "What is *not* Life," Coleridge asks, "that really *is*?" For "in the identity of the two counter-powers, Life *sub*sists; in their strife it *con*sists: and in their reconciliation it at once dies and is born again into a new form." This "universal life" of ever-renewing strife and reconciliation pulses through all individual forms and all the orders of being, beginning with "the life of metals"—where in "its utmost *latency* . . . life is one with the elementary powers of mechanism"[38]—up through the progressive levels of "individuation" to the human consciousness, which in its living reciprocity with its specific contrary, nature, is capable of achieving the awareness that there is only one Life within us and abroad.

Hence the statement I quoted earlier from Coleridge's letter to C. A. Tulk that "the Life of Nature" consists in the sustained tendency of the poles of "Light and Gravitation" to separate and re-unite.[39] But this same revealing letter, written within a few months of the final version of "The Eolian Harp," makes it plain that Coleridge's intuition of "the one Life within us and abroad" has not merely a metascientific basis, but a Biblical one as well. It will help to clarify this essential aspect of Coleridge's thought—and of the poem—if we turn back to consider the significance of Coleridge's statement to Tieck, that same year, that he had adopted the idea of the relation of light and gravity to color and sound "probably from Behmen's *Aurora*, which I had *conjured over* at School."

The Aurora, written in 1611–1612, was the first of Jacob Boehme's books; it is incomplete, and even more obscure than Boehme's later expositions of his esoteric but very influential doctrines. Through its fantastic terminology and melodramatic narration, however, we can make out its basic concepts and design. Boehme's undertaking is to elucidate the mystery of the creation of the world and of man, as the initial episode in the history of human and cosmic salvation. He bases his account of the creation on chapter one of Genesis (which he regards as in fact the story of a second creation, intended to repair the wreck of the angelic world occasioned by the fall of the angel Lucifer) and also upon the commentary on the creation in the Gospel of St. John (on which Boehme largely relies for his account of the first creation of a perfect world). But Boehme claims that he has been inspired by divine grace infused "in my spirit," and that he is therefore able to decipher the spiritual truths concealed within the esoteric sound-symbolism of the literal Biblical narrative.[40] Boehme's symbolic interpretation of the creation (more accurately, of the two creations) turns out, in fact, to be mainly a remarkably elaborated version of the doctrines and terminology he had learned (at this period of his life, at second hand) from the alchemical philosophy of Paracelsus and other Renaissance Hermeticists.

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[37] The quotations are from: "Fears in Solitude," 1. 24; "Reflections on Having Left a Place of Retirement," 11. 38–39; "This Lime-Tree Bower," 11. 41–43; "Frost at Midnight," 11. 59–61.

[38] Coleridge, *Theory of Life*, pp. 38, 40, 42, 51–52, 70. *Cf.* Schelling, *Von der Weltseele, Sämmtliche Werke* **2**: p. 374: "The source of life in the universal or great Nature is therefore the copula between gravitation and the light-essence [*Lichtwesen*]; except that this source from which all things flow is concealed in universal Nature and is not itself visible."

[39] *Collected Letters* **4**: p. 771; and see the letter to Gillman, 10 Nov., 1816, *ibid.*, p. 690. On 25 Oct., 1815, Coleridge wrote that the artist must maintain "communion with Nature"—"not the dead Shapes, the outward *Letter*—but the Life of Nature revealing itself in the Phaenomenon, or rather attempting to reveal itself . . ." (*ibid.*, p. 607).

[40] *The Aurora*, translated by John Sparrow, ed. by C. J. B. and D. S. H. (London, 1914), 18.5 and 25.49. There is a detailed commentary on *Aurora* in Alexandre Koyré, *La Philosophie de Jacob Boehme* (Paris, 1929), pp. 69–168.

To Boehme, the essential condition for all creativity and progression, both in being and in thinking, is a strenuous tension between contraries, or opposed forces, whose sequential separations and unions give rise to everything that exists. The archetypal struggle in the fallen world is between the contrary forces of good and evil, love and hate, but these are destined to eventuate in the triumph of good and love in the coming redemption. Even the original creation of the angelic world, however, resulted from the energy generated by opponent principles. For God the Father manifests a joyous union of divine powers that Boehme calls, collectively, the "Salliter," or the "Sal-niter." This totality involves seven different *Qualitäten*, which Boehme derives from *Quelle* and *quellen* ("a spring," "to gush forth"), and which are therefore not what we ordinarily call "qualities," but "powers" or "forces" (*Kräfte*). Each one of these elemental powers is a balance of opposing contraries, and each also has its appropriate counter-power. From the divine Salliter, in the successive unions and renewed oppositions of the diverse opponent powers and forces, issues all that constitutes the world, from stones and metals through plants and animals to the body and spirit of man, who as microcosm is the perfect analogue of the world's body and spirit. In Boehme's world there is thus no gap between animate and inanimate, body and mind, conscient and inconscient—all are an emanation of the powers of the one Deity, and throughout all there surges one life, exhibiting itself in the conflict and interpenetration of the same vital forces.

In this great radiation outward from the divine source of all life and being, Boehme puts by far the greatest stress on the role in creation of two elements, sound and light. The reasons for this emphasis are patent. In the Book of Genesis God's creation is by word, or sound. His first creative sounds are, "Let there be light," which forthwith becomes light, and His later creative sounds become all forms of life, including man. And in the first chapter of John we find the creative fiat represented as the Word, which is equated with light, and also with life, and finally becomes itself incarnate:

> In the beginning was the Word, and the Word was with God, and the Word was God. . . .
>
> All things were made by him; and without him was not any thing made that was made.
>
> In him was life; and the life was the light of men.
>
> And the light shineth in the darkness; and the darkness comprehendeth it not. . . .
>
> And the Word was made flesh, and dwelt among us. . . .

Boehme repeatedly echoes these passages from Genesis and John (see, e.g., Chapters XVIII and XXVI). In his symbolic translation of them into a philosophy of nature, light is not represented as one of the primal powers, but as generated from the ensemble of the seven powers; as Boehme puts it, light is "perpendicular" to the ontological plane of the powers. This light is equated with the Son, as well as with the sun, the "place" of light in the heavens; while in man, the light constitutes his soul and spirit. Sound, on the other hand, is one of the seven elemental powers within the divine Salliter itself; this power Boehme calls "Mercurius" (that is, Mercury or Hermes Trismegistus, the great magus of the Hermetic philosophers). Boehme identifies this "sound" (*Schall*) with the creative voice and with the harmony of the heavenly music; accordingly, from this "sound, tone, tune or noise . . . ensued *speech*, language, and the *distinction* of everything, as also the ringing melody and *singing* of the holy angels, and therein consisteth the forming or framing of all *colours*, beauty and ornament, as also the heavenly *joyfulness*" (*Aurora*, X.1). In its manifestation as speech, sound serves as the vehicle for the expression of spirit, hence as the vehicle (in God's creative fiat) by which the third aspect of God, the Holy Spirit, expresses itself. Sound, in Boehme's intricate system of analogies and identities, thus is equated with the Word, or divine Logos itself, and so is integral with light and life and the Son, as an element in the triune nature of God which manifests itself throughout the creation.

Whatever the extent of his claimed knowledge of *The Aurora* during his schooldays, we know that Coleridge closely studied and copiously annotated this and other books by Boehme, in the English "Law edition," from the year 1807 on, just prior to and collaterally with his immersion in Schelling and other *Naturphilosophen* during the second decade of the nineteenth century.[41] Coleridge's thinking was inveterately organic and genetic, always traveling back to the radical of a view—or as he called it, to the "seminal" idea—which has proved historically capable of growing into a total metaphysic.[42] It is clear even from my brief summation that he found a great deal in Boehme's dualistic vitalism that suited his own mature "dynamic" philosophy; and in the letter to Ludwig Tieck, as well as in his private annotations, Coleridge tended to impose on Boehme's inchoate views the terms and structure of the metascience he had developed on the basis of contemporary German thinkers. It was in line with this persistent tendency (and not in order to hide his debt to Schelling) that Coleridge interpreted Boehme's arcane statements about the primary roles of light and sound in nature to accord with his own doctrines about the elemental counter-powers of gravitation and light and their relative "predominance" in the diverse phenomena of sound and color.[43]

But what in Boehme's writings made the greatest appeal to Coleridge, as against Schelling's early *Naturphilosophie*, was that Boehme had derived his scheme of nature from the Biblical accounts of the creation, although Coleridge feared that Boehme had not entirely avoided the "Pantheism" that he found blatantly manifested in Schelling—the assimilation of a transcendent Creator into a religion of Nature.[44] As far back as the letter to Sotheby of 1802, it will be recalled, Coleridge had discovered the sense of "one Life" within all things, specifically, in "the Hebrew poets" of the Old Testament. Now, in a marginal comment on *The Aurora*, he comments on Boehme's treatment of light in the creation and Incarnation:

> That not Heat but Light is the Heart of Nature is one of those truly profound and pregnant Thoughts that ever and anon astonish me in Boehme's writings. . . . The affinity . . . of the Flesh and Blood generally to Light I trust that I shall make clear in my commentaries on the first and sixth chapters of the Gospel of John. Hence in the Logos (distinctive energy) is *Light*, and the *Light* became the *Life* of Man.[45]

The "commentaries" on John to which Coleridge alludes he planned to include in his *Logosophia*, the comprehensive philosophical work on which he labored for decades but never completed. In this "Opus Maximum," the exposition of his own "Dynamic or Constructive Philosophy" was to be "preparatory" to "a detailed Commentary on the Gospel of St. John," in order "to prove that Christianity is true Philosophy"; and this section was in turn to be followed by a treatise on "the Mystics & Pantheists," including Jacob Boehme.[46]

We return to the indispensable letters that Coleridge wrote to C. A. Tulk in 1817 and early 1818. There he begins his "rude and fragmentary" sketch of "the Science of the Construction of *Nature*" with God, who is the absolute "Identity" or "*Pro*thesis" which precedes any polarity between thesis and antithesis; Coleridge comments that to adopt the alternative, the "Lockian, and Newtonian" Creator as "an hypothetical Watchmaker," is in fact to "live without God in the world." And he begins his construction of nature—"the Genesis . . . the *Birth* of Things"—with an interpretation of the opening sentence of the

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[41] See Richard Haven, *Patterns of Consciousness*, p. 89; and on Coleridge's relations to Boehme as well as Schelling, pp. 89–96, 134–135, 138–142.

[42] Thus Coleridge persistently traced his, as well as Schelling's, views back through Boehme and Giordano Bruno to the pre-Socratic philosopher Heraclitus: Coleridge's own dynamic philosophy, he said, is no more than "Heraclitus *redivivus*." (To Tulk, *Collected Letters* **4**: p. 775; see also *ibid.*, p. 760 and *The Friend* **1**: p. 94n.)

[43] For specific passages in Boehme's *Aurora* that exhibit some similarity to Coleridge's views on light, sound, and color, see Duane B. Schneider, "Coleridge's Light-Sound Theory," and J. B. Beer, "Coleridge and Boehme's *Aurora*," in *Notes and Queries* (May, 1963), pp. 182–183 and 183–187. In his reply (*ibid.*, May, 1966, pp. 176–178), Richard Haven cites among other materials Coleridge's annotation (written *ca.* 1817) on *The Aurora*, IV.27:

"27 is admirable—the Messenger or Mercury of the Salitter is indeed Sound, which is but Light under the paramouncy of Gravitation. It is the Mass-Light."

Haven comments, justly, that this concept is presented by Coleridge not as Boehme's own idea, but "as an assumed principle in terms of which Boehme's obscure statements may be rendered intelligible and sensible," and that it is based on a "system of natural philosophy, obviously heavily indebted to the work of Schelling and Steffens."

[44] See, e.g., *Biographia Literaria* **1**: pp. 98–99, and Thomas McFarland, *Coleridge and the Pantheist Tradition* (Oxford, 1969), especially Excursus XIX, "Coleridge and Boehme." After the turn of the nineteenth century, Schelling himself increasingly built Boehme's concepts into his own philosophy, but without emulating Boehme's persistent attempt to maintain an identity between the first principle of his philosophy of nature, the personal God of the Bible, and the triune God of Christian doctrine.

[45] As transcribed by Alice D. Snyder, "Coleridge on Boehme," *Publ. Mod. Lang. Assn.* **45** (1930): p. 618.

[46] Letters of 27 Sept. and 7 Oct., 1815, in *Collected Letters* **4**: pp. 589–590, 591–592. *Cf. The Statesman's Manual*, p. 20: "What is expressed in the Scriptures is implied in all absolute science."

Book of Genesis, "In the beginning God created the Heaven and the Earth." Coleridge's hermeneutics is based on his view that the Bible embodies the ideas of "reason" in the mode of "imagination," hence that it is "a science of realities" expressed in "symbols." His interpretation of the Biblical accounts of the creation, therefore, like Boehme's, is symbolic, although on quite different grounds.[47]

I will not reconstruct the exegetic maneuvers by which Coleridge translates "And the Earth was waste and void . . . and Darkness on the Deep" to signify that what first came into existence was "gravitation," which is best designated by "the combination of the Ideas, Darkness & the Deep or Depth." He continues:

> And God said—Let there be *Light:* and there was *Light.* And God divided the *Light* from the *Darkness*—i.e., Light from Gravitation . . . and the two Poles of the material Universe are established, viz. Light and Gravitation. . . . The Life of Nature consists in the tendency of the Poles to re-unite. . . . God is the Sun of the Universe—it's gravitation or Being by his Omnipresence, it's Light by his only-begotten Son . . . Deus alter et idem!

He also conjoins the account of the creation of light in Genesis with the commentary on the creative Logos in the opening chapter of John:

> God SAID, Let there be Light: and there became LIGHT! In the beginning was the Word. All things *became* . . . through the Word, the living and vivific Word . . . whose Life is the *Light* of men. . . . The Light . . . rose up in the Darkness and in the Depth—and in and with it *became* . . . the two Primary Poles of Nature, Light and Gravitation. . . .

On these grounds Coleridge proceeds to "construct" the orders of being and of sense-phenomena that make up the universe, including, in the passage which is our central concern, the construction of color as "Gravitation under the power of Light" and of sound as "light under the power or paramountcy of Gravitation."[48]

Coleridge's inserted passage in "The Eolian Harp," then, is only the visible tip of a massive complex of submerged ideas, scientific and meta-scientific, Scriptural and theological. We know enough of this substructure to recognize now that the poet's moment of vision is also a theophany, and that the oxymorons in which the moment is expressed signify not only the "law of contradiction," or polarity, on which Coleridge's metascience is based, but also the central Christian mysteries. For in Coleridge's interwoven universe of correspondences and analogues, of exponents and symbols, "a light in sound" is the distant reflection of the light generated by the primal sound, "Let there be light," while "a sound-like power in light" is the distant echo of the creative Word which became flesh and is the Light as well as the Life both of nature and man.

In line 27, this one Life "meets all motion and becomes its soul." In the Newtonian world-picture, motion—as measured by the altering position, through time, of particles of matter in space—had been an elementary postulate. Coleridge, however, by intricate reasoning derives "ideal" (pre-phenomenal) time and space from his own first premise, or "Prothesis," as the primitive polar opposites whose synthesis constitutes "motion." He conceives motion, that is, as a point moving through space in time, so that it forms, and is represented graphically by, a line; and the bipolar line, in the next synthesis, achieves a third dimension as "depth." Coleridge cryptically summarizes to Tulk the role of these elementary constructs in generating the universe:

> Time × Space = Motion. Attraction × Repulsion = Gravity as Depth.—These are ideal relations. The ideal + real, or rather the Ideal = Real, World arises out of chaos (=Indistinction) or begins, with the creation of Light.

He adds, however, that "a Life, a Power, an *Inside,* must have pre-existed" the ideal dimensions of time, space, motion, and depth, of which "the LIFE *appearing*" in the real, or material, world is the result; and that this process of the "interpenetration of opposite energies," of which matter is a product, sustains itself, as process, to constitute the "spirit" in all matter.[49] Otherwise stated: the elemental rhythm of opposing and interpenetrating polarities in which life consists, when it meets all "ideal" motion, brings it into existence as matter, in which the continuing pulsation of the one Life constitutes the spirit or soul; and this vital outer rhythm, he goes on to say in "The Eolian Harp," has its analogue, in high moments of human consciousness, as a "Rhythm in all thought."

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[47] *Collected Letters* 4: pp. 767–769. For Coleridge's exposition of the Scriptures as a "system of symbols," products of the faculty of "imagination," which incorporates the ideas of reason "in images of the sense," see *The Statesman's Manual,* pp. 31–34, and p. 84: "True natural philosophy is comprised in the study of the science and language of symbols," and a symbol is not "a figure of speech or of fancy, but an actual and essential part of that, the whole of which it represents."

[48] *Collected Letters* 4: pp. 770–773, 805–806.

[49] *Ibid.,* pp. 771, 774–775. See also *Theory of Life,* pp. 50–56, and C. W. Miller, "Coleridge's Concept of Nature," pp. 87–91.

III. JOYANCE

Now, what of the "joyance every where" in line 29? "Joy" and "joyance" were specialized terms, used by Coleridge as the emotional index to a particular relationship between the conscious self and the outer world. To clarify its significance in "The Eolian Harp," we need to consider again Coleridge's evolving scale of being, at the point at which the reflexive consciousness emerges in man.

Man, Coleridge says in his letters to Tulk, represents the ultimate product of the two contrary "ends" of the life-process, namely "Individualization, or apparent detachment from Nature = progressive Organization" and "the re-union with Nature as the apex of Individualization." [50] And since, as he says in the contemporary work, the *Theory of Life*, "the form of polarity" applies at this as at every evolutionary stage, "the intensities must be at once opposite and equal," so that the independence of an individual man should ideally be matched by "interdependence" with other men in the social organization, while "as the ideal genius and the originality [i.e., the highest degree of human autonomy], in the same proportion must be the resignation to the real world, the sympathy and the intercommunion with Nature," which exists "in counterpoint to him." [51] But although man is both product and participant in the universal process of life, he is radically different from the rest of nature, in that by achieving consciousness, he also achieves freedom of the will. As Coleridge puts it in the same passage, man "is referred to himself, delivered up to his own charge"; and here things can go drastically wrong. For an excess in the tendency to individuation—especially when fostered by untoward "hardships" and "circumstances"—can force "a man in upon his little unthinking contemptible self," and so cut the individual consciousness off from the sense of its interdependence with other men and its intercommunion with outer nature.[52]

To be cut off from all relationship to man and nature, to suffer what he called "the evils of separation and finiteness," [53] was to Coleridge as to other romantic thinkers and poets the radical affliction of the human condition. This is the state to which the romantic philosopher, Hegel, gave the name "alienation," and it is, as Coleridge saw it, the inescapable situation of anyone who accepts the Newtonian world-picture, the dead universe of matter in motion, as existential reality. "Joy," on the other hand, is the term Coleridge specifically appropriated to the state of mind in which all alienation is annulled—it is an equipoise of the contrary mental powers, manifested in an inner life so abundant that it breaks through the barrier of self to yield awareness of the one Life that is shared with other selves and with nature. As Coleridge says about "joy" in his *Philosophical Lectures*, with respect to "genius," which is the term he uses for the creative power of the human mind and imagination:

> All genius exists in a participation of a common spirit. In joy individuality is lost. . . . To have a genius is to live in the universal, to know no self but that which is reflected not only from the faces of all around us, our fellow creatures, but reflected from the flowers, the trees, the beasts, yea from the very surface of the [waters and the] sands of the desert.[54]

To this I shall add a contemporary statement by Coleridge in *The Friend* of 1818. This passage, in its context, ascribes the scientific world-picture to an alienation of mind from nature, and counters it, as the premise of philosophy, with the primal intuition of an integrity of the self and not-self, mind and nature, of which the sign in human consciousness is the condition called "joy":

> The ground-work, therefore, of all true philosophy is the full apprehension of the difference between . . . that intuition of things which arises when we possess ourselves, as one with the whole . . . and that which presents itself when . . . we think of ourselves as separated beings, and place nature in antithesis to the mind, as object to subject, thing to thought, death to life. This is abstract knowledge, or the science of the mere understanding. . . . [The former on the

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[50] *Collected Letters* 4: p. 807. And to Tulk, *ibid.*, p. 769: From the coral to the man of genius, who represents "the maximum of Individuation . . . the whole process is cyclical tho' progressive, and the Man separates from Nature only that Nature may be found again in a higher dignity in the Man. . . ."

[51] *Theory of Life*, pp. 85–86.

[52] *Ibid.*, p. 86; *Philosophical Lectures*, p. 179.

[53] A marginal annotation to Boehme, as transcribed by Haven, *Patterns of Consciousness*, p. 127. On the central role of alienation and integration in romantic philosophy and literature, see M. H. Abrams, *Natural Supernaturalism: Tradition and Revolution in Romantic Literature* (New York, 1971), chaps. 4–5.

[54] *Philosophical Lectures*, p. 179. The relevance of this passage to the music described in "The Eolian Harp" is strengthened by Coleridge's statement near the end of the preceding lecture (p. 168) that music "produces infinite Joy. . . . It is in all its forms still Joy."

> other hand] is an eternal and infinite self-rejoicing, self-loving, with a joy unfathomable, with a love all comprehensive.[55]

IV. LOVE

In this intuition of the community of all life, the movement from "a joy unfathomable" to "a love all comprehensive" parallels the movement in "The Eolian Harp" from "joyance every where" to the universal love described in the next four lines, which Coleridge revised and integrated with the added passage on the one Life:

> Rhythm in all thought, and joyance every where—
> Methinks, it should have been impossible
> Not to love all things in a world so filled. . . .

There remains, in conclusion, to show the relation in Coleridge's thinking at this period between all-comprehensive love and the elemental powers of gravity and light, as these manifest themselves in a light in sound.

In this instance, too, the connection is established in one of his letters to C. A. Tulk. There having "constructed," on both metascientific and Biblical grounds, "the two Primary Poles of Nature, Light and Gravitation," he goes on to say that these "correlatives and correspondent Opposites, by and in which the Unity is revealed," are

> (to borrow your happy and most expressive Symbol) the Male and female of the World of Time, in whose wooings, and retirings and nuptial conciliations all other marriages . . . are celebrated inclusively.—These truths it is my Object to enforce in the manner best fitted (alas! how hopeless even the best!) to the present age.[56]

To indicate what lies behind this astonishing attribution of sexuality to all phenomenal nature ("the World of Time") requires another look, from a different vantage point, at Coleridge's metascientific enterprise. The post-Newtonian world-picture repelled him because it had been deliberately stripped bare of any correlative to the life of man and any sanction for human purposes and values. While a young man of thirty Coleridge had written to Southey that "a metaphysical Solution, that does not instantly *tell* for something in the Heart, is grievously to be suspected as apocryphal," and in *Biographia Literaria*, contemporaneously with the last version of "The Eolian Harp," he extolled Boehme, despite the "delusions" and fantasies he found mixed with his "truths," because he had contributed "to keep alive the *heart* in the *head;* gave me . . . [a] presentiment, that all the products of the mere *reflective* faculty partook of DEATH. . . ."[57] Coleridge meant that, as man cannot live by science alone—in his terms, by the evidence of the senses ordered by the "reflective" faculty, the "understanding"—neither can he endure a universe constructed to suit the narrow requirements of Newtonian physics rather than the large requirements of human life. Coleridge undertook to develop an alternative world-vision that would suffice to the heart as well as the head, by supplementing science with imagination—as he put it in terms of his faculty-philosophy, the phenomena of "the senses," as classed and ordered by "the understanding," are to be "impregnated" by "the imagination," and so reconciled and mediated to the requirements of the supreme and inclusive power of mind, "the reason."[58]

We can translate Coleridge's terms into the idiom of our own time. His prime endeavor, like that of his contemporaries, the great German architects of all-inclusive metaphysical "systems," was to assimilate the findings and hypotheses of contemporary science to the inherent demands and forms of the human imagination, in the kind of inclusive vision of man in the world that Northrop Frye calls a "myth of concern."[59] In this undertaking man is put back into nature, from which the sophisticated logic of science had severed him, by applying the primitive imaginative categories of analogy, correspondence, and identity. Through this procedure nature is once more endowed with the inherent energies of life and with humanly intelligible purposes and values, and so constitutes a milieu in which man can fully live and be at home. And since the cultural myth of concern that Coleridge had inherited was the Judeo-Christian one set forth in the Bible, and since Coleridge felt a greater need than contemporary German philosophers to salvage the essentials of its creed of salvation, he undertook explicitly to ground his world-vision on bases common both to the Old and New Testament and to "speculative physics."

No doubt Coleridge would have rejected this description, since it transposes the criterion of his intricately rationalized system from a truth of correspondence to ultimate reality to a truth of correspondence to man's deepest instincts and needs, as these shape the forms of his imagination. But Schelling, I think, might well have accepted it, for Schelling was one of the German philosophers who helped establish the present views, of which Northrop Frye is a distinguished representative, that human needs inevitably compel the creation of a mythology to live by, in civilized no less than in primitive societies. Schelling asserted that in the modern world the mythology of the ancients has been outworn, while "the mythology of Christendom" is unsuitable for valid poetry, so that now "every truly creative individual has to create his own mythology." All these separate creations, however, will prove, in the indeterminate future, to be parts of a single system of myth. The pre-eminent material for this evolving mythology is contemporary *Naturphilosophie*, such as he has himself developed. It is his conviction, Schelling says, "that in the higher speculative physics is to be sought the possibility of a future mythology and symbolism," which will reconcile the contraries between the pagan and Christian mythologies in one vision of nature; but this achievement, he adds, will be the work not of any one individual, but of "the entire era." [60]

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[55] *The Friend* 1: pp. 520–521.

[56] *Collected Letters* 4: p. 806.

[57] 7 Aug., 1803, *Collected Letters* 2: p. 961; *Biographia Literaria* 1: pp. 95–98.

[58] *The Statesman's Manual*, pp. 73–74; see also p. 31.

[59] See Northrop Frye, "The Critical Path," in *In Search of Literary Theory*, ed. Morton W. Bloomfield (Ithaca and London, 1972).

Conspicuous in Schelling's own later *Naturphilosophie* is its tendency to move from abstract concepts to explicitly anthropomorphic and mythical formulations. This tendency is most obvious in the instance of his basic principle of polarity. In his early writings Schelling had based this category on the concepts of bipolarity in recent scientific developments in magnetism and electricity, as well as on Kant's essay of 1786, which undertook a "metaphysical" derivation of the primitive "matter" of Newtonian physics from the elemental "powers" of attraction and repulsion.[61] Coleridge in his turn based his early formulations of the polar-principle on the theory of his scientific friend, Humphrey Davy, that all substances are the product of elementary forces, even before he absorbed the views of Kant and the metaphysical system of Schelling.[62] Coleridge, however, rightly pointed back to a long tradition, from "the Dynamic Theory of the eldest Philosophy" in the pre-Socratic thinkers, through Renaissance Hermeticism, to Jacob Boehme as precedent to Schelling in putting forward "the universal law of polarity." [63] In these earlier thinkers the philosophical representation of an all-originative and sustaining interplay of elemental opposites had not yet completely emerged from its origins in a cosmic myth of universal bisexuality—the myth of male and female divinities or powers, antithetic and warring yet mutually attractive and necessary, which periodically merge in unions that beget the world and all things in it. In its older forms, in other words, universal polarity had been derived from bisexual procreation as its prototype; and it is the sexual dimension of human nature, we may plausibly conjecture, that gives the myth of cosmic bisexuality its persisting hold on imagination even today, in current forms of the "perennial philosophy." After all, as Schelling remarked, human union and procreation is "the single instance in which we are to a certain extent permitted to be witnesses of an original creation." [64]

In his early writings of 1797, Schelling at times referred to the contrary powers of gravity and light as the feminine or "mother-principle" and the masculine or "procreative principle," which are "represented" or "expressed" in the differentiated sexes of the higher organisms.[65] Increasingly after that he dramatized his metaphysics of polarity by endowing it with anthropomorphic features and relationships. He wrote in 1804, for example, that "made pregnant by light, gravity gives birth to the diverse forms of things and delivers them from her fruitful womb to independent life." Driven by the compulsion to progressive individuation, the powers of gravity and light, at the organic stage of evolution, separate first into the bisexual organs in a single plant, then into the separate sexes of the animal and human realms. Yet every individual remains the product of both powers, and each monosexual individual needs its polar opposite in order to fulfill the contrary compulsion of nature toward identity. "This is the secret of eternal love . . . in that each is a whole, yet desires the other and seeks the other." Hence:

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[60] Schelling, *Philosophie der Kunst, Sämmtliche Werke* **5**: pp. 442–449. Friedrich Schlegel had earlier pronounced the need for a "new mythology" to serve as the ground for modern poetry, and anticipated the emergence of such a mythology from a synthesis between current philosophical idealism and the discoveries of contemporary natural science. *Gespräch über die Poesie* (1800), in *Kunstanschauung der Fruhromantik*, ed. Andreas Müller (Leipzig, 1931), pp. 184–190.

[61] *Metaphysische Anfangsgründe der Naturwissenschaft*, in *Immanuel Kants Werke*, ed. Ernst Cassirer, **4** (Berlin, 1913): pp. 400–446. Both Schelling and Coleridge refer repeatedly to this essay. Goethe's science, in his *Metamorphosis of Plants* (1790) and *The Theory of Colors* (1810), was candidly based on the concept of the quasi-sexual generative power of contraries throughout the realm of nature. See Ronald D. Gray, *Goethe the Alchemist* (Cambridge, 1952), chap. 10.

[62] On Humphrey Davy's early theories, and Coleridge's use of them before he began an intensive study of Schelling, see Haven, *Patterns of Consciousness*, pp. 134–141.

[63] *The Friend* **1**: p. 94n.; to Lord Liverpool, *Collected Letters* **4**: p. 760. Coleridge goes on (p. 761) to decry the modern view that "nothing grows, all is made," as against "the ancients," with their basic view of "the natura rerum—i.e. the birth of things," their search after "the *acts* of the world," and their central use of "the symbol of begetting."

[64] Schelling, *The Ages of the World*, trans. F. de Wolfe Bolman, Jr. (New York, 1942), p. 212; on the following pages Schelling translates into philosophical categories the phenomena of sexual attraction, union, and generation.

[65] Schelling, *Ideen zu einer Philosophie der Natur* (1797), *Sämmtliche Werke* **2**: pp. 109–110; see also **2**: pp. 375–376, 532–534; **3**: pp. 324–325, n. 4; **4**: pp. 204–205; **7**: pp. 174, 217, 453.

> As the being and life of nature rests on the eternal embrace of light and gravity, so the unions of the two sexes, their begetting and propagation of innumerable species, are nothing else than the celebration of the eternal love of those two [powers] which, when they could have been two, yet wanted to be one, and thereby created all of nature.[66]

Such also are the grounds of Coleridge's statement, in his letter to Tulk, that light and gravitation are "the male and female of the World of Time, in whose wooings and retirings and nuptial conciliations all other marriages . . . are celebrated inclusively." Like the German *Naturphilosophen,* Coleridge sometimes mythicized his metascience, to humanize his vision of a natural world whose diverse orders of being are linked by familial correspondences to man and mind, and whose processes are compelled by inconscient analogues of love and hate, of oppositions and marriages. Hence those strange passages in Coleridge's speculative natural history that seem to a casual reader to be merely fantasies based on free association. In a manuscript, for example, he declares that, though all the chemical elements contain the two counter-powers, "Gravity and Light with Warmth as the Indifference," yet because of the differing "predominance of some one, Carbon most represents Gravity, Oxygen Light, and Hydrogen Warmth." When, in the sequential combinations of these chemical elements, nature achieves the plant, we find in its generative organ, the flower, "the qualitative product of Oxygen = Light in the outness and splendor of Colors, the qualitative product of Hydrogen = Warmth in the inwardness and sweetness of Fragrance"; and this fragrance Coleridge interprets as the accompaniment of "gentle love," of which the flower serves as a material symbol. And when—in the continuing genetic process of the "interpenetration" of the primal opposites, gravity and light—we reach the level of birds, we find that the colors of their plumage correspond to the colors of the flower, but that a new phenomenon, bird-song, or sound, has replaced the odors of flowers and taken over their biological function in ensuring fertilization. In birds, then, Coleridge says, we have "light in the form (under the power) of Gravity in Color, and Gravity sub formâ et ditione Lucis subditione"—that is, "gravity subordinated to the form and dominion of light"—in the bird-song. The "sweet yearning varied by quiet provoking challenging sounds" are thus "the Surrogates of the Vegetable Odors—and like these, are the celebrations of the Nuptial moments, the hours of Love."[67]

Such passages provide a bridge between the "sound-like power in light" and the love of all things in the inserted section of "The Eolian Harp." They provide also a broader perspective through which to review the long evolution of that poem between 1795 and 1817, as I described it at the beginning of this essay. In its first short form "The Eolian Harp" had been a love-poem which assimilated the relation of the wind and the strings of the harp to the dalliance, the "wooings and retirings," of the human lovers. It had next been developed into a marriage poem, and also expanded into a metaphysical speculation about "all of animated nature." In its final form it is still a love poem, but a cosmic love-poem, in which the love between the poet and his bride becomes the exponent of a universal relationship—the "union of the individual with the Universe" which, Coleridge said, occurs "through love."[68] It is still a marriage poem, too, but one in which the human union becomes an exponent of the primal union in which "all other marriages are celebrated inclusively." For in the lines added in 1817 the poet breaks through sensation into vision, in which the phenomenal aspects of the landscape, its colors, music, and odors, are intuited as products and indices of the first manifestations of the creative Word, gravitation and light, in whose multiform unions all nature and life consist; and he goes on to celebrate the world's song of life and joy, which sounds through the wind-harp, in which the silent air is merely music unheard, and of which the subject is the one Life that, in marrying all opposites, also weds the single consciousness to the world without. And however we may judge the metascientific and religious beliefs that engendered the moment of vision, they have in this passage been transformed by the imagination from a creed into the poetry of immediate experience, and so compel our participation independently of either belief or disbelief:

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[66] Schelling, *System der gesammten Philosophie . . .* (1804), *ibid.* 6: pp. 266, 407–409. This work was unknown to Coleridge, since it was first published from the manuscript remains in the *Sämmtliche Werke* in 1860.

[67] Transcribed from manuscript by Kathleen Coburn, *Inquiring Spirit,* No. 185.

[68] *The Notebooks of S. T. Coleridge* 2, No. 3159: "Coadunatio Individui cum Universo per Amorem." In the same passage Coleridge describes his experience in viewing a landscape as capable of annihilating "in a deep moment all possibility of the needlepoint pinhead System of the *Atomists* by one submissive Gaze!"

> O! the one Life within us and abroad,
> Which meets all motion and becomes its soul,
> A light in sound, a sound-like power in light,
> Rhythm in all thought, and joyance every where—
> Methinks, it should have been impossible
> Not to love all things in a world so fill'd;
> Where the breeze warbles, and the mute still air
> Is music slumbering on her instrument.

Coleridge, we know, printed this passage as an addendum to a poem already set in type. The insertion throws the whole poetic structure into imbalance by locating the climax of the meditation near the beginning. By 1817, however, Coleridge, though capable of poetic moments, was not capable of sustained poetic endeavor; as he said two years later, "Poeta fuimus," but "the Philosopher, tho' pressing with the weight of an Etna, cannot prevent the Poet from occasionally . . . manifesting his existence by smoke traversed by electrical flashes from the Crater." [69] In succeeding editions of "The Eolian Harp" Coleridge simply transferred the added passage into the text without altering its context. But the poet's retraction of his metaphysical speculations in the original conclusion to the poem had never been at ease with its surroundings either in tone or idiom, and after this high moment of religious as well as metaphysical imagination, the coda is rendered inconsequent as well as anticlimatic.

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[69] To Thomas Allsop, 13 Dec., 1819, *Collected Letters* **4**: p. 979.

The Eolian Harp

COMPOSED AT CLEVEDON, SOMERSETSHIRE

My pensive Sara! thy soft cheek reclined
Thus on mine arm, most soothing sweet it is
To sit beside our Cot, our Cot o'ergrown
With white-flowered Jasmin, and the broad-leav'd Myrtle,
(Meet emblems they of Innocence and Love!)
And watch the clouds, that late were rich with light,
Slow saddening round, and mark the star of eve
Serenely brilliant (such should Wisdom be)
Shine opposite! How exquisite the scents
Snatch'd from yon bean-field! and the world *so* hush'd!
The stilly murmur of the distant Sea
Tells us of silence.
                    And that simplest Lute,
Placed length-ways in the clasping casement, hark!
How by the desultory breeze caress'd,
Like some coy maid half yielding to her lover,
It pours such sweet upbraiding, as must needs
Tempt to repeat the wrong! And now, its strings
Boldlier swept, the long sequacious notes
Over delicious surges sink and rise,
Such a soft floating witchery of sound
As twilight Elfins make, when they at eve
Voyage on gentle gales from Fairy-Land,
Where Melodies round honey-dropping flowers,
Footless and wild, like birds of Paradise,
Nor pause, nor perch, hovering on untam'd wing!
O! the one Life within us and abroad,
Which meets all motion and becomes its soul,
A light in sound, a sound-like power in light,
Rhythm in all thought, and joyance every where—
Methinks, it should have been impossible

Not to love all things in a world so fill'd;
Where the breeze warbles, and the mute still air
Is Music slumbering on her instrument.

And thus, my Love! as on the midway slope
Of yonder hill I stretch my limbs at noon,
Whilst through my half-clos'd eyelids I behold
The sunbeams dance, like diamonds, on the main,
And tranquil muse upon tranquillity:
Full many a thought uncall'd and undetain'd,
And many idle flitting phantasies,
Traverse my indolent and passive brain,
As wild and various as the random gales
That swell and flutter on this subject Lute!

And what if all of animated nature
Be but organic Harps diversely fram'd,
That tremble into thought, as o'er them sweeps
Plastic and vast, one intellectual breeze,
At once the Soul of each, and God of all?

But thy more serious eye a mild reproof
Darts, O belovéd Woman! nor such thoughts
Dim and unhallow'd dost thou not reject,
And biddest me walk humbly with my God.
Meek Daughter in the family of Christ!
Well hast thou said and holily disprais'd
These shapings of the unregenerate mind;
Bubbles that glitter as they rise and break
On vain Philosophy's aye-babbling spring.
For never guiltless may I speak of him,
The Incomprehensible! save when with awe
I praise him, and with Faith that inly *feels;*
Who with his saving mercies healéd me,
A sinful and most miserable man,
Wilder'd and dark, and gave me to possess
Peace, and this Cot, and thee, heart-honor'd Maid!

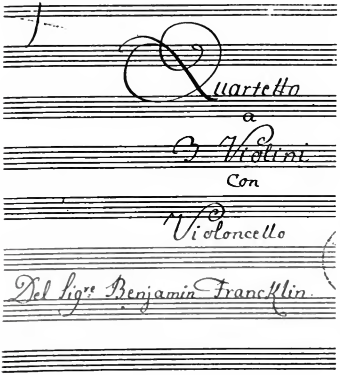
THE STRING QUARTET ATTRIBUTED TO BENJAMIN FRANKLIN[1]

W. THOMAS MARROCCO

Professor of Music, University of California, Los Angeles

(Read April 22, 1972)

IN 1945 Guillaume de Van apprised the musicological world of a string quartet (3 violins and cello) composed by Benjamin Franklin. Preserved in the Bibliothèque Nationale (Music Division) in Paris, with the identification *coté Réserve 1888* (figs. 1 and 2),[2] this unique composition in open score bears the following inscription written in long hand on the title page:



Quartetto
a
3 Violini
Con
Violoncello
Del Sigre Benjamin Francklin

FIG. 1.

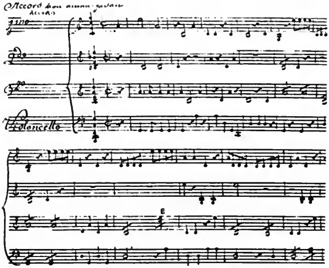
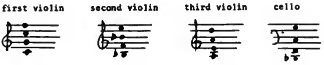


FIG. 2.

Quartetto / a / 3 violini / con / Violoncello / Del Sig^{re} Benjamin Francklin [*sic*]

On the second page the performers are directed to retune their instruments thus:



With this tuning sixteen different tones are available on open strings, and although not specified, no use of fingers is implied. It consists of an Introduction [Allegro], Minuet, Capriccio, a second Minuet and a Siciliano, and performers plod through the five short movements which are all in the key of F major; the harmonies in root position fluctuate generally between the tonic and dominant with momentary excursions to the supertonic, sub-mediant and leading tone. Denied the possibility of modulation, contrast is achieved through meter and mood changes: the first movement in cut time, both Minuets naturally in triple

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[1] This quartet has been accorded numerous performances and was also recorded in England for the Society for the Preservation of the American Musical Heritage (MIA 117). The score caught the attention of the noted American composer, John Vincent, who arranged it for string orchestra and Obbligato and it was published by Mills Music, Inc., New York, 1963. In his transcription he transposed it from F to G major, eliminating the open strings feature, and added expression marks and bowing and an obbligato, which could be played by an oboe, flute, clarinet, violin, bells (glockenspiel), celeste, vibraphone, harp, or piano.

[2] De Van erroneously gives *coté Rés. 1808* on page 1 of the facsimile edition published by Editions Odette Lieutier, Paris, 1945.

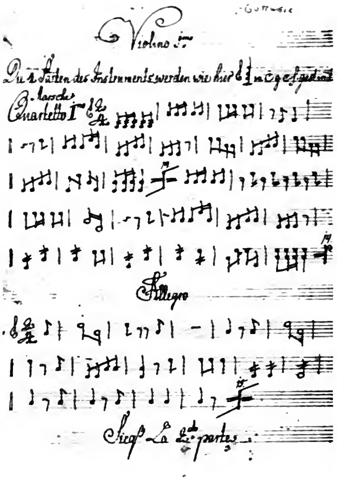

FIG. 3.

meter, the Capriccio in duple and the Siciliano in duple compound. There are no bowing nor expression marks of any kind.

According to Guillaume de Van,

> La signification du quatuor de Franklin est grande et variée: pour l'historien des origines de la république américaine, il constitue une nouvelle pièce qui enrichira le dossier déjà comble des prouesses de cet ambassadeur de l'esprit du nouveau monde; pour le psychologue, il montre comment un homme intelligent mais dépourvu de tout sens musical peut réussir un devoir de contrepoint élémentaire: pour le musicologue, il offre un exemple inattendu de l'usage de la *scordatura*. . . .[3]

Gilbert Chase, while admitting to Franklin's musical accomplishments, declared, "The manuscript is not in Franklin's hand, nor is there any further evidence to substantiate his authorship of this string quartet. . . .[4]

Twelve years later, while examining the music holdings preserved in the Christian-Weise-Bibliothek in Zittau, East Germany, H. C. Robbins Landon discovered a copy of the Paris manuscript and stated,

> T.D. [onley] Thomas found anonymous copies of this and another similar work in Göttweig Abbey. The second piece is known to be by Franklin and was written in Paris about 1778; a facsimile of the MS was published by the American Philosophical Society in Philadelphia.[5] This second work, also for 3 violins and cello, in scordatura, is obviously a companion piece to the first.[6]

The two Göttweig quartets (figs. 3 and 4).[7] also in manuscript bear the following note perhaps entered by the Abbey librarian:

> (Warhscheinlich componiert von Benjamin Franklin - /nach Meinung von Herrn H. C. Robbins Landon - / John Kirkpatrick, Dept. of Music, Cornell University, Ithaca, N.Y. - / hat diese Handschrift am Juli 1959 gesehen, und die / Wasserzeichen kopiert. und Seiner Gnaden hat ihm / eine gute Photocopie sehr gütig gegeben).

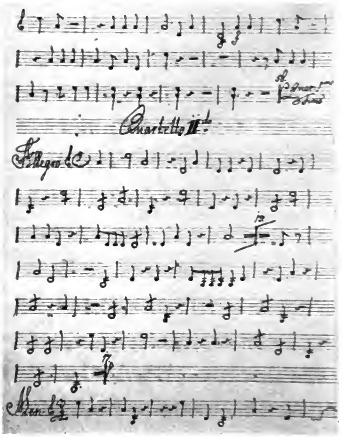

FIG. 4.

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[3] *Ibid.*, p. 2.

[4] *America's Music* (New York, McGraw-Hill, 1966), p. 89.

[5] Robbins Landon is mistaken here. The American Philosophical Society did not publish a facsimile edition, it merely has the Lieutier facsimile publication.

[6] "Doubtful and Spurious Quartets and Quintets attributed to Haydn," *Music Review* **18** (1957): pp. 213-221.

[7] MS No. 109 (Nos. 1 and 2).

Unable to obtain a photocopy from Zittau, this writer used a copy of it made by K. F. Pohl preserved in the Gesellschaft der Musikfreunde in Vienna (figs. 5 and 6).

The title page reads:

> Quartetto / pour Violino I^{mo} II^{do} III^{tlo} / con Violoncello / composé par / J. Haydn. Man tangendo digitas mordas.[8] [Non tangendo digitis cordas]

To add more confusion to this intriguing puzzle, still another manuscript came to this writer's attention, this time from Prague, the National Museum, Department of Music (figs. 7 and 8).[9] Unfortunately, only the third violin and cello parts have been preserved, but the surprise is that it consists of eight movements—all of Göttweig No. 1 and all but the first movement of No. 2 The composer is given as Ignatio Pleyel.[10]

With the aid of Dr. Hedwig Mitringer, Director of the Gesellschaft der Musikfreunde in Vienna, three more copies came to light; the first, manuscript No. IX 33008, contains seven continuous movements, and on the title page the word *Ungenannter* was crossed out and the name *Ferrandini* was placed below (figs. 9 and 10).[11] The second is numbered IX 31653, and, like the Göttweig source, it contains two quartets (figs. 11, 12, 13).

The title page reads:

> Neugebohrnes musikalisches Gleichheitskind / ein / Quartett / für 3 Violinen and Violoncell / welche ohne Fingersetzung blos mit leeren Saiten gespielt wird und doch eine schöne Harmonie bildet / Prag bey Haas. Jesuitengasse N. 186 [n.d.]

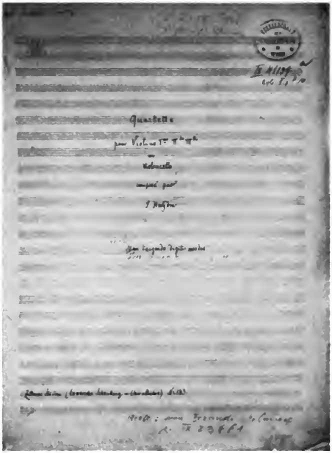

FIG. 5.

Added in pencil above the title appears the name "Ferrandini." The title page of the third copy, also printed, reads:

> Quartetto Armonioso / Senza digiti / per / Tre Violini & Violoncello / del Signore Ferandini / Milanese / Prix 36 X^{t} / in Augusta / Presso Gombart et comp. (figs. 14 and 15)

Containing four movements—Marchio, Allegro, Menuetto-Trio, and Rondo—this and Vienna (anonymous) are the only sources which include bowing and expression marks.

A chart of the seven quartets, their various movements, and scordatura is given in the Appendix as a means of clarification and identification.

As can be seen, the case for Franklin as the composer of one of the string quartets is considerably weakened. The question is, could Franklin have composed such a piece? Certainly there are many arguments in his favor. He possessed the analytic mind to construct what Guillaume de Van called "a mathematical tour de force." [12] Franklin was well known in Europe as an inventor and statesman. The *Bristol Gazette* of January 12,

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[8] MS No. IX 23661. Added later by a different hand at the bottom of the page, "Recte: von Ferandi, Milanese." Haydn's name is dutifully crossed out. In a letter to this writer dated April 11, 1966, Karl Geiringer wrote, "I do not believe that he [Haydn] ever employed scordatura in a string quartet and I have never heard of a genuine Haydn quartet for 3 violins and cello."

[9] MS No. XXXIII F 200. I am grateful to Mr. Robbins Landon for having informed me of the existence of this manuscript.

[10] A prolific composer, Pleyel (1757–1831) composed about 60 string quartets all for two violins, viola, and cello. Unfortunately, the quartet under discussion is not in Pleyel's hand. Although it may have been copied by a scribe at the composer's request, it is curious that the scribe wrote "Ignatio Pleyel: instead of "Ignazio Pleyel." The article on Ignaz Joseph Pleyel in the *Musik in Geschichte und Gegenwart* (Allgemeine Enzyklopadie der Musik, ed. F. Blume, Kassel und Basel, 1949) does not list the quartet.

[11] A Giovanni Ferandini (Venice, 1710-Munich, September 29, 1791) is listed in *Die Musik in Geschichte und Gegenwart* as an opera composer in the service of the Elector Karl Albert in Munich.

[12] *Op. cit.*, p. 2.

FIG. 6.

1762, bore the news of the Glassychord invented by Mr. Franklin.[13] The *Musicalischer Almanach für Deutschland* for the year 1782 stated, "Of all the musical inventions, the one of Mr. Franklin of Philadelphia has created perhaps the greatest excitement."[14] Franklin was no stranger to music and, indeed, played the harp, guitar, the glass dulcimer [Sticcado-Pastorale], he perfected the glass harmonica, printed hymn-tune collections, and wrote a short treatise on music aesthetics. There is no reason to suspect that the device of

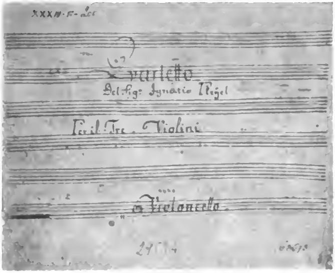
XXXIII·F-205
Quartetto
Del Sig: Ignatio Plejel
Per il Tre. Violini
e Violoncello

FIG. 7.

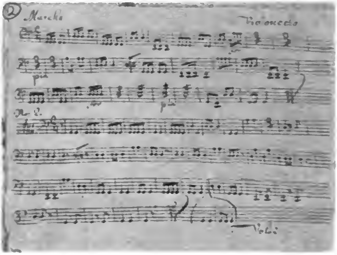

FIG. 8.

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[13] Chase, *op. cit.*, p. 89.

[14] *Ibid.*, p. 89.

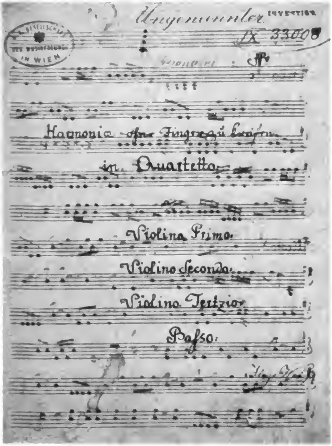


FIG. 9.

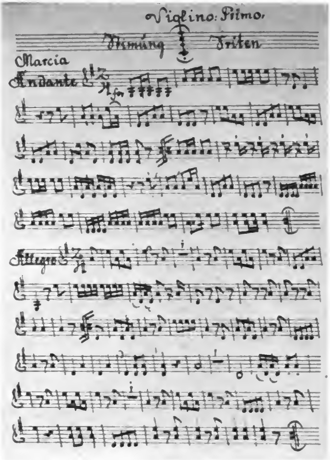
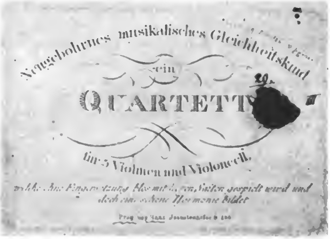


FIG. 10

scordatura was unknown to him.[15] However, in all instances, fingers were used. The uniqueness of this quartet lies in the playing on open strings alone, without the use of fingers. It was assumed that any musical amateur could draw the bow over the strings and keep time. Since such use of open strings precludes the possibility of modulation, it seems to this writer that no serious composer would tolerate such restrictions unless done with tongue-in-cheek, simply as a musical joke.

In the interest of discussion, let us play the devil's advocate and present the other side of the coin. Since Franklin was a music dilettante, we would expect that this composition would have been mentioned in his correspondence or in his *Autobiography*, but, alas, such is not the case.[16] Moreover, for a man who lived and practiced the thirteen moral virtues listed in his *Autobiography*,[17] the idea of affixing (or allowing to be affixed) his name, albeit misspelled, is quite improbable.

In the opinion of this writer, the original music appears to be that preserved in Göttweig Abbey. Again referring the reader to the chart, it will be seen that the Göttweig manuscript and the Prague (anonymous) consist of two complete



Neugebohrnes musikalisches Gleichheitskind
ein
QUARTETT
für 3 Violinen und Violoncell,

FIG. 11.

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[15] See the article on "Scordatura" in *Die Musik in Geschichte und Gegenwart* 12: cols. 425–429.

[16] Franklin's *Autobiography* (Harvard Classics, I, New York, Collier & Sons, 1937) breaks off in 1737. The first five chapters were written in England in 1771, continued in 1784 and again in 1788, but there is no mention of his having composed a string quartet.

[17] *Ibid.*, p. 79.

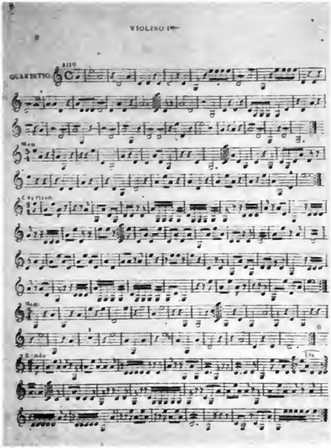

FIG. 12.

quartets, the first containing four movements, the second five. Moreover, in the Göttweig manuscript the second quartet follows on the heels of the first on the same page. In the Prague printed version, the second quartet begins on a new page. The Paris manuscript lacks the first quartet, while the Vienna (Ferandini) lacks the second quartet. The Prague (Pleyel) contains eight continuous movements, having omitted the second *Allegro*. The Zittau copy and the Vienna (anonymous) are similar in that both have F♯ in the key signature and both contain five movements borrowed from Göttweig 1 and 2 and a new Finale and Coda. Save for the change in title, the Prague (Pleyel) *Allegretto* is the same movement as the *Capricio* [*sic*], which title incidentally is misspelled in all three sources. The fourth movement in Prague (Pleyel) titled *Moderato* is similar to the fourth movements in all other sources. The Paris scribe neglected to add the word *Allegro* to the first movement, changed the title of the last movement from *Rondo* to *Siciano*, and mischievously named our statesman as the composer.

The tunings employed in the seven quartets are almost identical with only three changes. The fourth string of the cello is moved down from C to B♭ in the Paris, Göttweig, and Prague (anonymous), the fourth string of the second violin in the Paris manuscript is moved up from A to B♭ and the E string in the first violin part of the Zittau and Vienna anonymous is moved to F♯.[18] Apart from scordatura, no two sources are exactly alike. Assuming the Göttweig source to be the original, we find that minute differences in melody and rhythm permeate all other sources.

None of the manuscripts or the printed versions are dated. However, a review of the printed version, Ferandini (Vienna) appeared in the

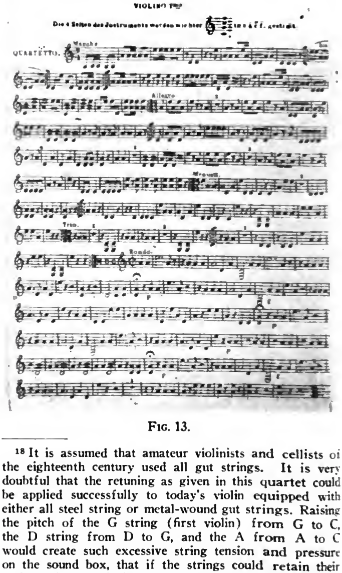

FIG. 13.

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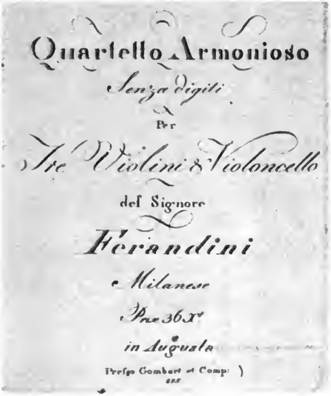
[18] It is assumed that amateur violinists and cellists of the eighteenth century used all gut strings. It is very doubtful that the retuning as given in this quartet could be applied successfully to today's violin equipped with either all steel string or metal-wound gut strings. Raising the pitch of the G string (first violin) from G to C, the D string from D to G, and the A from A to C would create such excessive string tension and pressure on the sound box, that if the strings could retain their tuning without slipping (provided that they would not snap outright) the quality of sound resulting from the tension would border on the miserable, and the danger of wrenching the tail piece from the peg would be ever present.

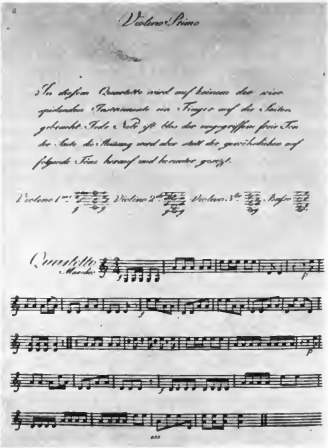
Allgemeine Literatur Zeitung published in Jena on June 25, 1799, 783–784.[19] Thus a *terminus ad quem* is established at least for this one source.

Unfortunately, this writer's attempt at dating the music through an examination of the watermarks proved frustrating and inconclusive. Of the hundreds of watermarks contained in George Eineder's *The Paper Mills of the Former Austro-Hungarian Empire,*[20] only one resembled that found in the Prague (Pleyel) manuscript. It consisted of three names—ANTON-HELLER-GASTORF. Eineder informs us that "About 1742 the mill comes into the hands of the Heller family."[21] In 1820 one F. Heller is recorded as the owner of the paper mill in Gastorf on the Obertka.[22] The Paris manuscript watermark consists of three crescents of various sizes plus the letters *AV*. Guillaume de Van ignored the watermarks, but states, "L'écriture est celle d'un copiste professionel de la fin du XVIII siècle."[23] No information regarding the Zittau manuscript could be obtained from the Christian-Weise-Bibliothek librarian.



Quartetto Armonioso
Senza digiti
Per
Tre Violini & Violoncello
del Signore
Ferandini
Milanese
Prez 36 Xr
in Augusta
Presso Gombart et Comp:

FIG. 14.



Violino Primo

In diesem Quartetto wird auf keinem der vier spielenden Instrumente ein Finger auf die Saiten gebraucht. Jede Note ist blos der ungegriffene freie Ton der Saite die Stimmung wird aber statt der gewöhnlichen auf folgende Töne herauf und herunter [illegible]

FIG. 15.

In light of the above, this writer expresses his deepest regrets for depriving our great statesman-inventor of the authorship of this singularly unusual composition. But, perhaps Franklin himself would not have wanted his name associated with such a musically sterile and naïve composition. If he had lived to read the vitriolic review of the work in the *Allgemeine Literatur Zeitung,* he might have agreed with the reviewer! The article is given below in its entirety in a translation from the German.

> In Augusta (Augsburg) b. Gombart u. Comp.; Quartetto (?) armonioso (?) senza digiti (?) per tre Violini e Violoncello del Signore Ferandini, Milanese. No date. 2½ pages folio.
>
> If Herr Ferandini felt himself called upon to compose pieces of music in which the players were not to use their fingers—as is supposedly indicated by the words *senza digiti*—this could have been accomplished with more wit and style than in the musical farce now under consideration, which is totally degrading to the art. Presumably the composer imagines that a March, a short Allegro, a Menuett and a Rondo, set for four instruments, is a

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[19] I am grateful to Dr. Georg Feder of the Joseph Haydn Institut in Köln who discovered and notified me of the review.

[20] Hilversum, 1960.

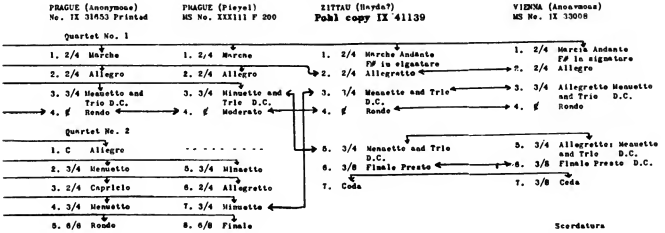
[21] *Ibid.*, p. 117.

[22] *Ibid.*, p. 117.

[23] *Op. cit.*, p. 1.

quartet. And so he chooses very unhappily this title for his botched piece of work. The adjective "armonioso" seems on the other hand to be a clerical or printer's error; for we find this miserable work, in which moreover not even one mediocre melody is worthy of mention, very discordant and extremely impure in phrasing. Immediately in the first three measures one finds proof of this. In measure 4 the leading tone "e" is doubled in a very unfavorable way at the octave. In measures 5 and 6, etc. the bass corresponds to the other voices in the same way one often hears it improvised in the beer halls. Measures 6, 7, 8—the first violin plays nothing but fifths against the bass, but unfortunately only in counter movement. About the modulation and rhythm we will waste no words, for in the case of such bungling it is not worth the trouble. Just one observation about the prescribed tuning or rather lack of tuning of the instruments cannot be suppressed. If Herr Ferandini had retuned the 16 strings of all four instruments so that in addition to the diatonic leading tone in F major, there would at least have been an "h" for C major, etc., then the whole would have been improved noticeably with respect to modulation and completeness of the chords. But he seems not to have thought of this at all. But, of course, who

APPENDIX



PRAGUE (Anonymoue)
No. IX 31653 Printed

Quartet No. 1

1. 2/4 Marche
2. 2/4 Allegro
3. 3/4 Menuetto and Trio D.C.
4. ₵ Rondo

Quartet No. 2

1. C Allegro
2. 3/4 Menuetto
3. 2/4 Capricio
4. 3/4 Menuetto
5. 6/8 Rondo

PRAGUE (Pieyel)
MS No. XXXIII F 200

1. 2/4 Marche
2. 2/4 Allegro
3. 3/4 Minuetto and Trio D.C.
4. ₵ Moderato

- - - - - - - - -

5. 3/4 Minuetto
6. 2/4 Allegretto
7. 3/4 Minuette
8. 6/8 Finale

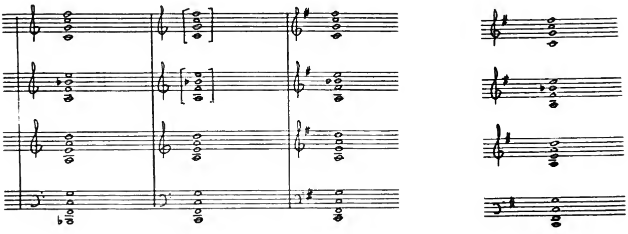
ZITTAU (Hayda?)
Pohl copy IX 41139

1. 2/4 Marche Andante F# iu elgaatare
2. 2/4 Allegretto
3. 3/4 Menuette and Trio D.C.
4. ₵ Rondo
5. 3/4 Menuette and Trio D.C.
6. 3/8 Finale Presto
7. Coda

VIENNA (Anoavmous)
MS No. IX 33008

1. 2/4 Marcia Andante F# in signature
2. 2/4 Allegro
3. 3/4 Allegretto Menuetto and Trio D.C.
4. ₵ Rondo
5. 3/4 Allegretto: Menuetto and Trio D.C.
6. 3/8 Finale Presto D.C.
7. 3/8 Coda

Scerdatura



would think and reflect long when composing a quartet! He causes the two lower strings of the first violin, namely the G and D to be tuned a fourth higher, consequently in C and G, unconcerned about whether the strings will be able to sustain this, and producing by the excess tension of these strings an imbalance in respect to the over-all sound. Or does Herr Ferandini demand that one strings the violin more loosely for the playing of this quartet? This would in fact be too great an expectation. Every average violinist can easily imagine what an unpleasant effect must result from a piece of music played on nothing but open strings, since one, as you know, tries to avoid open strings in so far as possible. If Herr Ferandini cannot write anything better than such an inferior farce, then we urgently beseech him to let this quartet be his last work.[24]

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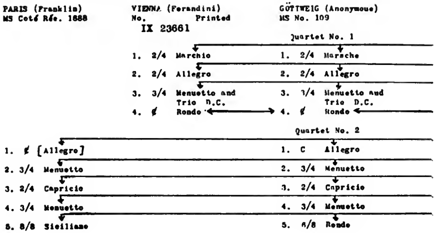
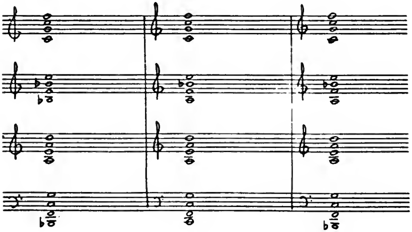
[24] It is understood that the review refers to the first of the two quartets, specifically the printed version by Ferandini. However, the criticism leveled at the first quartet is applicable to the second since it was by the same composer. It is a companion piece in its identical scordatura, texture, harmonic movement and naïveté. In the opinion of this writer the second quartet suffers from the same deficiencies as the first.



Scordatura



THE RITCHEY-CHRÉTIEN APLANATIC TELESCOPE: LETTERS FROM GEORGE WILLIS RITCHEY TO ELIHU THOMSON

HAROLD J. ABRAHAMS

St. Davids, Pennsylvania

THE LETTERS presented here, from George Willis Ritchey, 1864–1945, designer and builder of major astronomical telescopes, to Elihu Thomson, electrician and inventor, deal chiefly with Ritchey's part in an important improvement in the design of reflecting telescopes, by himself and the French mathematical optician Henri Chrétien. They throw light on the history of American astronomy during the period of great achievement in the construction of large telescopes, and incidentally tell something of the personal stresses that attended Ritchey's service as superintendent of construction and director of optical shops at the Mount Wilson Observatory under George Ellery Hale.

Ritchey, born in Tupper's Plains, Ohio,[1] studied drawing and design at the University of Cincinnati and became an assistant at its astronomical observatory, where he began to experiment with methods for mounting large astronomical mirrors. Continuing his work in Chicago after 1888, he made a 24-inch mirror. In 1891 he became acquainted with George Ellery Hale, and when in 1897 Hale was appointed director of the newly created Yerkes Observatory at Williams Bay, Wisconsin, he made Ritchey superintendent of instrument construction. At Yerkes, Ritchey developed a grinding machine for the 60-inch mirror, and began his famous series of photographs of nebulae.

In 1904 he moved, with Hale, to the new Mount Wilson Observatory at Pasadena, where he had major responsibility for the design and construction of the mirror, mount, accessories, and dome of the 60-inch telescope, a task which he carried out with great precision. His invention of an adjustable plateholder permitted photographic exposures to be continued from one night to another. Photographs taken with this great telescope surpassed everything of the kind done earlier. This success was followed by his promotion to directorship of the optical shops, where he supervised the grinding of the 100-inch mirror and designed its mount.

In 1910 Ritchey met Henri Chrétien, who collaborated with him in improving the optical design of photographic mirrors. Chrétien computed the curves for a combination of reflecting surfaces discovered by Ritchey, a modification of the Cassegrain telescope, which had the advantages of reduced spherical aberration and compactness of mounting. The letters which follow discuss the development of the Ritchey-Chrétien design, which has been used successfully in several large telescopes, and also of Ritchey's invention of the so-called cellular structure of large telescope mirrors, intended to make them lighter than the thick glass disks hitherto used, and less subject to distortion by changes in temperature. His plan of constructing the cellular backing with pieces of glass cemented together proved impracticable, but the idea was put into effect later in the great 200-inch Mount Palomar mirror by casting the quartz disk in a mold shaped to form the cellular cavities in its base.

However, the great respect which Ritchey had by now won in Europe through his collaboration with Chrétien led to his appointment in 1924 as director of the Dina optical laboratories of the Paris Observatory. He lived in France for some years but finally returned to California, where he owned and operated a citrus orchard.

The letters presented here are in the Library of the American Philosophical Society. Parts of some of them have been published by Harold J. Abrahams and Marion B. Savin in *Selections from the Scientific Correspondence of Elihu Thomson*, Massachusetts Institute of Technology Press, 1971. Thomson's replies have unfortunately not been preserved.

Pasadena, California
September 7th, 1910

My dear Dr. Thomson:

There are several matters of great concern to me, and as I believe, to science, about which I would like to consult you. I enclose a small reprint from the Monthly Notice of the Royal Astronomical Society, which gives a slight idea of some of my later methods and results with the 60-inch reflector. Since that was published I have secured a photograph of the Great Cluster in Hercules in which Miss Ware has actually counted 27,600 stars outside of the large, comparatively dense central region where the stars begin to superpose. The small star-images in this photograph (which had 11 hours exposure in the telescope) are only 1.03 seconds of arc in diameter.

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[1] Deborah J. Mills, "George Willis Ritchey and the Development of Celestial Photography," *Amer. Scientist* **54**, 1 (1966): pp. 64–93.

But a much more remarkable photograph still is that of the spiral nebula Messier 33, Trianguli,[1a] which was also secured very recently, with 8½ hours exposure, and with the new plate-carrier.[2] Atmospheric definition was fine, and I used the utmost care in guiding and refocussing. The result is astonishing, and I think most important. Miss Ware has counted 26,434 nebulous stars in the convolutions of this spiral, besides 2,348 other stars which do not appear to be nebulous, and are therefore probably superposed.

I was able to exhibit a large series of these nebula and cluster photographs at the Solar Union meeting which has just closed here. As a result, four directors of observatories wish me to submit plans and prices for large reflectors for their observatories. They are: Dr. Backlund of Russia; Dr. Struve of Berlin; Dr. Hartmann of Gottingen, and Dr. Perrine of Córdoba (Argentine Republic). Sir David Gill of England is also corresponding in regard to a very large reflector for the Cape of Good Hope.

With the co-operation of M. Henri Chrétien, a French astronomer who has been here for six months, and who has been working with me in making and studying the reflector photographs, I have just designed or developed a new type of reflecting telescope which has the following peculiarities: the large mirror has a focal ratio of only 2½ to 1, so that the tube is very short; it is of the Cassegrain type, the convex mirror magnifying only 2½ times, so that the total equivalent ratio of the telescope is 6¼, a ratio which gives very good results as to brightness, in photographing nebulae with photographic plates as at present made, i.e. of the present speed. In the new type I depart entirely from the paraboloid and hyperboloid, and use a pair of curves which, although only slightly different, give a *much larger field* of good definition than does the paraboloid of 6¼ to 1 ratio used as a Newtonian. In other words, since we have *two curves* in this type which can be modified to "fit" each other, we can (and do) entirely eliminate the "coma"[3] or "wing" or "arrow head" pattern of the out-of-axis images, and secure, instead, out-of-axis images which are smaller and nearly round. And this with a type of mounting which is so short and compact and rigid and convenient in use (since the observer works on the floor at the lower end of the tube instead of at the upper end as in the Newtonian) that the cost of the reflector complete, with its mounting and protecting dome (or other protection) is very greatly reduced. I enclose two diagrams (prints) which show the difference in the construction, and in the size of the surrounding protection, of the new type as compared with the 60-inch type. You will notice that in both types I have abandoned a dome altogether (on account partly of its great cost) and have substituted instead a steel framework which we call the wind-screen, and a movable protecting house which is at once a weather-protection and a temperature-protection. The wind-screen is octagonal, turns on a circular track as a dome does, is entirely open at the top, and so allows the telescope to be used in much better, homogeneous, out-of-door conditions than when used in a dome.

It seems to me that the new short type, with this new wind and weather, and temperature protection, will reduce the cost of great reflectors practically to one-half; and in addition, we overcome what has been the great weakness of the short-focus reflector in the past, namely its small field.

One serious difficulty remains, namely that of the glass disks for very large mirrors. The St. Gobain people have not yet succeeded in making a good 100-inch disk, which is to be 13 or 14 inches thick. I have just begun experiments, on a small scale, on disks built up from thinner plates, with ribs between, as shown, in the enclosed diagram; the ribs are arranged so as to allow a circulation of air throughout the interior by means of a small exhaust fan, so that the entire mass would readily respond to the air-temperature. The sole difficulty appears to me to be that of a proper *cement* for uniting the ribs and plates. This cement should be very *thin* so that no body of it would remain between the glass surfaces; and it should be entirely *unaffected by moisture;* it should also be *permanent.* In the case of the 100-inch the plates and ribs would be about 2½ inches thick, or even 3 inches. These plates could readily be made even larger than 100 inches, and the built-up disk would be lighter than a solid one. All of the plates and ribs should of course be cast from the same melting of glass. My present plan is to cut all of the ribs from flat plates of glass of the proper thickness, and then cement them in place.[4]

[1a] A small constellation (one of Ptolemy's forty-eight), located between Andromeda and Aries.

[2] Ritchey designed the double-slide plate-carrier, which makes it possible to make a long series of photographs of nebulae and clusters. This device allows correction of focusing and correction for rotation of field, as frequently as desired during long exposures. It rapidly became "standard equipment" everywhere. (See note 9.)

[3] A hazy border around an object seen through an imperfect lens.

The built-up disk is in the purely experimental stage and may not succeed, although Dr. Stratton of the Bureau of Standards thinks it is very promising, and he has a cement which he thinks is just right for the purpose. He is a strong and able friend who is assisting me in several of the extremely difficult problems (some of them not optical or mechanical) which confront me.

But the short type of reflector I feel sure will succeed; the problem of the new curves is worked out mathematically, and there can be no question of the great improvement which they allow. Mr Chrétien will be in Boston (at Harvard Obsy.) on his way home to France, and so important do I consider this problem of the new curves that I have requested him to notify you of his arrival at Harvard Obsy., in the hope that you will meet him and discuss this new type with him. I shall have this new type of reflector patented, in the hope of securing many orders for large instruments of this type, which I believe must entirely supercede the other forms (Newtonian etc.) And on account of your wide experience in *patent* matters I beg your advice in the following matters, *after* you have seen Chrétien, and discussed the matter with him.

1st The new curves are computed so as to give no *coma* for out-of-axis images. Incidentally (or *providentially*) it happens that the aberration also is *very small* even for flat photographic plates, and is of such peculiar nature that it can be greatly improved by the use of slightly curved photographic plates—a result which is possible only with this pair of curves of the mirrors. With the curved photographic plates the aberration is marvellously small, and the out-of-axis star-images are *round.* These new curves (of the mirrors) make the *short type* of reflector possible, with its resulting great economy. Now in securing a patent, would you consider it sufficient to patent the new curves, convex and concave, (of the mirrors) only, since all these results follow immediately from this source; defining these curves in such a way as to leave no question of their character? The curves are both *between* the paraboloid and the hyperboloid; they have at present no names; the large *concave* one must be *tested* at its center of curvature by measurement of the points where the normals of the successive zones cross the axis. The small *convex* one can be tested in combination with the large finished concave and a collimating plane mirror, just as I now test convex hyperboloids (see my Smithsonian paper on the Modern Reflecting Telescope).

(To recapitulate): This new combination of two new curves (large concave and small convex) makes possible the following important results, all of which are of the greatest importance for the improvement and future development and use of great reflecting telescope. 1st The field is greatly improved, since (a) there is no *coma* for out of-axis images (b) the *aberration* of out-of-axis image is small, and (c) this aberration is of such a nature that it is very greatly diminished and at the same time the image became *round,* by the use of slightly concave photographic plates. 2nd The new curves make the very *short* type of reflector possible, the tube being less than half (about 2/5) as long as the Newtonian of the same equivelant focus, thus diminishing the cost of the tube, the mounting, and (*very* greatly) the protecting dome, or wind-screen and movable house: thus, reducing the total cost of a great reflector to 60% or even 50% of the former cost. 3rd In the new type the observer works from the floor, or from a low platform or observing ladder, instead of at the upper end of the tube as in the Newtonian; he works at a point of the mounting where the *motion* due to the diurnal motion of the telescope is *slow* and *small.*

My dear Dr. Thomson: I know I am troubling a very busy man with my business, but I am sure I have found a very important improvement which may mean a great deal for all of us and for science. Any advice you may be able to write me in regard to the nature of the patent (to make it *basic*) will be most gratefully received. I had even thought of going to Boston to see you personally about the whole matter. If you think this desirable please telegraph me (to my residence, 733 North Mentor Ave. Pasadena) and I will go immediately.

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[4] Ritchey claimed for the cellular mirror that its individual parts can be annealed in shorter time, that the mirror is stronger, more rigid, can be ventilated so as to prevent temperature deformation, can be constructed from available material and is more enduring than solid mirrors.

I have written the above in great haste (as you can see) and at intervals of pressing work, so it is somewhat disconnected. I should have stated that even for the very short instrument which I am considering $2\frac{1}{2} \times 2\frac{1}{2} = 6\frac{1}{4}$ equivalent ratio the out-of-axis images at the edge of a 30′ field are round and only 1.3″ diameter as compared with images 5.2″ wide and long given at the focus of a paraboloidal minimum of ratio of $6\frac{1}{4}$ to 1, at the edge of the same 30′ field. In other words, in the new form the light of stars at the edge of a 30′ field is packed in an area only 1/16 as large as in the case of the paraboloid. The gain in faint (out-of-axis) stars and in the details of nebulae will be very great.

Hoping to hear from you soon, I remain

Very sincerely yours
G. W. Ritchey

Pasadena, California
Sept. 27, 1910

My dear Dr. Thomson

Many thanks for your two letters. Your suggestions about the builtup mirror I must leave until a little later—until I have had time to think them over more. We are now making (in my own private shop) a builtup disk after the plan of the drawing I sent you, and I have cut all of the pieces for this out of one large plate of 1-inch thick plate glass. But this glass is *rolled*, of course which probably gives it a perceptible grain like that of wood (I mean only in the sense of a *stronger* and *weaker* direction, the two at right angles to each other). So I am trying to get from St. Gobain some 40-inch disks 1 inch thick, all from the same pot, and not rolled. I am anxious to know of any cements for glass which you can recommend for this purpose—their composition, and how to apply them (with heat, and what degree, etc.).

But I wish to write especially today about the new curves and the patent. I was especially glad to learn that Chrétien succeeded in seeing you. In regard to Schwarzschild's paper on a two mirror reflector: His entire paper is in three parts, only one of which, the second, relates to the reflector. The entire paper is on geometrical optics, is treated in a peculiar and exceptionably skillful way, and gives the general formulae for the curves of both the reflector and refractor. Paper No. 1 treats of the general formulae very fully. No. 2 treats of the reflector, and introduces, (as an illustration of how the general formulae may be applied) a peculiar form of reflector which gives a very large flat field without *coma*. But this form is, I think, of little practical value; at least, it does not possess these features of *shortness* and *convenience* and *economy of construction* which my short form possesses.

The form which he suggests, and uses to illustrate his formulae is this:

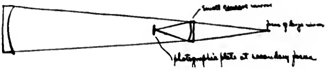

FIG. 1.

You see this is neither a Gregorian nor Cassegrain. The large mirror has a large focal length, say 9 to 1, thus requiring a long tube (unless the secondary mirror is very large also and therefore shuts out much light. The secondary mirror is inside of the focus of the large one (unlike the Gregorian) and is *concave*, thus shortening the equivalent ratio. The photographic plate is *between the two*, and far up, near the small mirror, thus shutting out the rays which should reach the small mirror from the large one. Or if a small diagonal plane mirror be introduced instead of the photographic plate, it is a still worse obstruction than the plate, because it must be larger than the plate, and nearer the secondary mirror. But this is the peculiar form which gives the best field, because both curves (of the mirrors) are shallow. This form seems absolutely hopeless to me for practical purposes. In fact, it was not Schwarzschild's form, nor his paper, which started me on this enquiry. I started out to find a *short, economical, convenient* form *with good field* which would be the best for *large reflectors* (which I think are *certain* to have an immense use in the future). The long types like the 60 inch require too large and expensive a dome (or wind-screen and movable house) so that the cost of these accessories becomes too nearly equal to the cost of the telescope. And the long type is inconvenient in use: the observer must follow, by means of an observing platform high in the air, the upper end of the tube (in the Newtonian, that is, in all his short-focus work) where the motion is large. In my form he is near the center of motion. After a long and careful estimate, I think the new form will reduce the total cost of a large reflector (with accessories) fully one third. Not only are the wind-screen and movable house reduced to less than one half their former linear dimensions, thus reducing the cost of these parts to *one-eighth* or less of their former cost, but the tube also is so much shorter, and therefore lighter, that it weighs, with all its accessories, mirrors etc. only 75% or even less, of its former weight: and therefore the fork, the polar axis, the float, and all parts of the mounting are reduced in weight, and consequently in cost, in the same proportion. The skeleton tube is so short, and can therefore be made of such thin sheet steel, that we can without great expense use a high-nickel steel very close to "invar"[5] in its construction. (This can all be made of *sheet*, of say two thicknesses only, and will therefore be easy to get, which special shapes, angles, tees etc. would not) By this use of *invar* we can reduce the apparent focal changes due to temperature to nearly zero.

Now in regard to the patent. I have a patent lawyer in Los Angeles who seems to be very able and well posted in the legal side of his subject, although he knows little or nothing of optics. He says (which I did not know before) that this improvement must be *described,* in order to secure a patent, so fully and accurately and practically that "any person skilled in the art would be able to produce the new curves by following this description." In other words, in his opinion it is *not* sufficient to say that the new pair of curves concave & convex is such that the "coma" is entirely eliminated, and that this same pair of curves gives a good field even with high curves of the two mirrors, thus making the very short type of telescope possible, with all of its advantages of economy and convenience in use. These things would all be said, no doubt, but they would not constitute a legal description. In his opinion, the curves being new, and nameless, and therefore entirely undescribed elsewhere, it will be necessary to describe the new curves by describing the optical tests for them. The large mirror must of course be tested at its center of curvature, by means of the intersections of the normals (of the successive zones of the surface) with the axis. These points of intersection are of course readily determined when the equation of the new curve is known. (As you know, this is one of the methods, and a very good one, of testing the paraboloid.) When the large mirror is thus finished, it will be set up in combination with the small convex mirror and a collimating plane mirror, thus

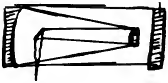

FIG. 2.

and the small convex is now tested precisely as the small hyperboloid is tested in the old Cassegrain (see my Smithsonian book).[6] All that is necessary is to figure the small convex mirror so that it "cuts off" to appear perfectly flat, or uniform in illumination for the axial rays, i.e. with the artificial star in the axis. The convex mirror will then *have the desired new curve.* In other words it is fitted to the new curve of the large mirror. My patent lawyer thinks it will be necessary to give the computed intervals along the axis (for the intersections of the successive normals of the large mirror) for one special size and ratio of telescope of the new type, and also to state briefly how these intervals would vary for different ratios and sizes. This, with diagrams or descriptions of the tests, he thinks would supply the necessary legal descriptions of the new curves. Thus we would proceed to state the results of the use of these new curves—how they give a good field even for an extremely short telescope, i.e. with high curves of the mirrors; how they eliminate the "coma"; that the small aberration of out-of-axis images is of such a character that it is almost entirely cured by the use of slightly curved photographic plates; and then the great practical advantages in economy, convenience etc. which result from the use of the new curves, with perhaps a drawing of a complete reflector, with wind-screen and movable house, of the new type.

Kindly inform me how this all appears to you[7]—whether in your opinion my lawyer is right in regard to legal description. Do you think such a description as outlined above, would differentiate the new type sharply from the Cassegrain as formerly made. And do you think that such a name as the following would be clear and precise: "An improved combination of concave and convex mirrors with new curves, for reflecting telescopes." Or perhaps better, "An improved combination of optical mirrors, one concave and one convex, with new curves, for reflecting telescopes." The second title seems to me full and distinctive, but no doubt it can be improved upon.

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[5] An alloy of steel and nickel, which shows practically no expansion or contraction under temperature change.

[6] George W. Ritchey: "On the Modern Reflecting Telescope and the Making and Testing of Optical Mirrors," *Smithsonian Contributions to Knowledge* **34** (1904).

[7] Ritchey did well to consult Thomson on the subject of patents, for the latter's skill and knowledge in this field were widely held in high regard.

You will be interested to know that I am already at work, with two opticians, upon a pair of mirrors, to try out, on a large scale, the new curves experimentally. The large mirror is 27 inches in diameter, the small one about 9 inches. The *equivalent* ratio of focal length to aperture is 6¼ to 1, the large mirror being 2½ to 1 and the small mirror magnifying 2½ times. So the equivalent focal length is 14 ft. 6¾ inches. The radius of curvature of the large mirror is 135 inches, so that the depth of its curve is about exactly ⅔ of an inch, which certainly does not seem excessive. The radius of curvature of the 9 inch convex mirror is 70.714 inches, so the depth of its curve is about 0.143 inch, or roughly 1/7 inch. This curve you will notice, is not deep, and will therefore be very easy to figure.

When these mirrors are figured I can determine *experimentally* all of the data about field, curvature of photographic plates [8] etc. very easily in the optical laboratory. Later we will mount these mirrors, but the mirrors alone, with the tests in the optical shop, will give us all the necessary proof for the patent. Is it not interesting to note that for the ratio provisionally adopted (2½ × 2½) the outside length of the tube of such a 27 inch reflector will be 5 feet 8 inches, the distance between the centers of the two mirrors being only 46-2/7 inches? And that for even this very short combination the field is better, even *without the use of curved photographic plates,* than with a paraboloid (Newtonian) with ratio 6¼ to 1. (=2½ × 2½), that is, with the same equivalent focal length.

There is another important matter which I discussed with Dr. Stratton of the Bureau of Standards a month ago, about which I want to consult you. Dr. Stratton is here every Summer, visiting his father, and he has seen much of my work. He knows much about the relation of my work to the development of this observatory. He has seen the 60-inch reflector, and has examined it carefully, and he saw a series of 20 large transparencies of nebulae which I had on exhibition at the recent conference of astronomers here. I told him that conditions here are such that I cannot carry out my ideas in this observatory without intolerable difficulties and delays; that the more I accomplish, and the more important the results which I secure, the more difficult are the conditions made under which I must work, and the less is the assistance which I am allowed for carrying on my work. This is a strange condition of affairs is it not? And yet this is the exact truth. It is for this reason that I have turned to the manufacture of telescopes for other observatories: conditions here are fast becoming such that no self-respecting man, trying to carry out important work, could possibly endure them. In fact, conditions have been so in my case for a full year past.

I know that in saying these things I am exposing myself also to criticism—that most men will say "if Ritchey cannot get on in the Solar Observatory it must be his own fault." But I know that if I am in error, it is on the side of too much long-suffering and endurance. I have two explanations of the conditions here: one is the presence on the staff of an unprincipled man who has made himself the favorite of the director; the other is the peculiar and exceptionable susceptibility of the director to such influences *at all times, and particularly now, or of late* when he is probably not entirely sound mentally. You probably know that he has gone to Egypt and Palestine for a year, with his family under his physician's orders, and that he has been able to do little or no mental work for the past six months. The favorite is of course now acting director. In order to carry out my ideas in regard to the new type of (short) reflector, the new built up mirror disk, the new fine-grained and rapid photographic plates I am obliged to do these things in my private laboratory, either at my own expense, or with the assistance of Mr. Hooker, who is a good and faithful friend to me. My salary has been reduced $1000.00 during the past year.

I did not tell Dr. Stratton all of these things, but only that conditions here had become unendurable and that I must find a means of carrying out my own ideas and work in my own way;

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[8] The usual flat photographic plate yielded a bowed field when used with the "new curve" mirrors, for which reason Ritchey perfected a curved plate with a uniform layer of photographic emulsion which was of very high degree of purity.

that for this purpose I must either go into manufacture or find another, and more independent, observatory position. Professor Stratton said that I must not think of wasting my time (comparatively) in manufacture. He said that the 60-inch reflector and the photographs which I am securing with it, are epoch-making; that a way should be found, and must be found, by which I would be enabled to carry on my work with generous support and conditions, and by which I should be enabled to carry on my direct photography (not only of the nebulae and star-clusters, but also of the planets and the moon) *continuously*, instead of in one week only in each month. He volunteered to assist me in finding a means to do these things of course *outside* of this Institution; he offered to take up the matter with strong friends in Washington and the east. He wants copies of my photographs to use in this endeavor. He says he firmly believes that the results can be accomplished in one way or another; that there is no science for which money can be so readily secured as for astronomy. That my special work of direct photography should be the most easily appreciated of all lines of astronomical work because the results are so readily understood, and are interesting and illuminating and popular. He expected to write you or see you about this entire matter and wished me to write you about it.[9]

I must close for this time. I hope this has not annoyed you, and that you will be willing with your suggestions and advice to aid us.

Hoping that I may hear from you again at your convenience I am

Very sincerely
G. W. Ritchey

Pasadena, California
Dec. 10, 1910

My dear Dr. Thomson

Your welcome letter of Dec. 4th is just received. In regard to the lecture, please do not go to any trouble about it. I understood that this was a science club or society at Lynn, with which you were connected. I am asked to lecture before the Society of Arts of the Institute of Technology, early in March; and I also have a very cordial letter from the curator of the Lowell Institute; but as these two appear to be intimately related, the lecture will probably be before the former only. I will let you know definitely a little later.

I know you will be interested to know that the 20-inch plane "built-up" mirror which I have made (in my private laboratory) has proved an entire success. It has been figured plane, and stands the most rigorous optical tests precisely as well as a solid mirror does. Although it is made of 1 inch plate glass cemented together with silicate of soda, there is not the slightest effect shown due to the plate glass having been rolled. All parts of the built-up disk were cut from one piece of plate—the front and back circular disks 1-inch thick, and the ribs, also 1 inch thick and $1\frac{3}{4}$ inches wide or high.

Furthermore, the figure of the new mirror is very decidedly *less* affected by the daily rise and fall of temperature than is a beautiful (solid) 20-inch test plane, 3 inches thick, with which I am comparing it; and still further, the new mirror suffers decidedly less flexure from its own weight, when supported at three points of the edge, than does the solid mirror.

It remains to be seen whether the figure of the new mirror will be permanent. Each cemented joint—the front surface and back one—was allowed to dry two weeks, and was then varnished to protect the cement from moisture. As the cemented joints are made with fine-ground glass surfaces practically in contact, the sodium silicate being so thin as to practically only fill the interstices of the fine-ground surfaces, I do not expect any change. Six months time will decide this, I think.

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[9] Another problem which he studied for many years was the direct photography, with very high powers, of small bright objects (planets, individual craters, bright nuclei of globular clusters, etc.). He planned a small, very light, double-slide plate-carrier for guiding, "fitted with an extremely light and quick-working occulting shutter, so that the photograph is built up by a larger number of short exposures made only at brief instants of finest definition." He expressed his belief that his plan would produce photographs of small details and delicate contrasts such as have never been dreamed of—details at least 10 times smaller than any hitherto photographed. He felt that 99 per cent of the time and effort of observers was spent on spectroscopic work, yet the opportunity for great advances by means of direct photography with great reflectors was as great as that "which was introduced by the invention of the telescope itself, 300 years ago." In addition to this advantage, there was another, namely, that the graphical or pictorial nature of photographs so produced provided the most "perfect opportunity for popularizing astronomical knowledge, by means of the publication of the finest attainable photographs of the planets, the moon, comets, the milky way, the star-clusters, the nebulae, the zodiacal light, etc." He knew from his experience in lecturing with his astronomical photographs how universal an interest there was in such pictures and simple explanations of them. He thought it incredible that no serious effort had been made to meet this need, nor to set up a great popular educational observatory, with the largest and most perfect photographic telescope which could be built, for making superb photographs for popular and scientific use. Such a thing would interest everyone, children as well as adults, and they would be the better for a knowledge of astronomy. Resulting from all of this there would be increased interest in astronomical work, and thus countless new discoveries.

The most rigorous optical tests of the new mirror show no trace whatever of its ribbed structure, or of any abnormal conditions whatever, when compared with the solid disk.

I thoroughly believe, as a result of making and testing this 20-inch mirror, that a large mirror made in this way will be distinctly better than if made with a solid disk. It will be entirely free from the great internal strains which are present in all large solid disks, and it will be comparatively free from the disturbances of figure which all large and thick disks suffer from temperature changes. But I do not expect other people to believe that such built-up mirrors, on a very large scale, will surpass, or even equal solid mirrors,—until I have actually demonstrated it on a large scale. But I am sure that any person who sees the performance of the 20-inch will agree with me that it is already demonstrated that very large built-up mirrors would certainly be good enough for spectroscopic purposes. I expect to see, within a very few years, an extremely large telescope, with built-up mirrors, of the short focus type, expressly for spectroscopic work. Such an instrument could be comparatively cheap, simple, and crude, and yet be amply good for spectroscopic work; it would collect an enormous amount of light, and would send all of it, of all wavelengths, through the slit. It appears to me a great waste to use such refined instruments as the 36-inch and 40-inch refractors and the 60-inch reflector for spectroscopic work.

The 27-inch telescope with the new curves is coming on rapidly. We should have complete tests of the field, curvature of field, etc. within eight or ten weeks.

I enclose one of my circulars which I am sending out to four thousand schools and colleges. I am making an effort to establish a business in order to be able to carry out some of my plans which I see no prospect of carrying out within this institution.

I am looking forward to coming out to California with you about March 15 or 20.

Very sincerely yours
G. W. Ritchey

Pasadena, California
July 8th, 1912

Dear Dr. Thomson

We have the 100-inch mirror polished to an approximately spherical surface, but are encountering two serious troubles which apparently result from the bad internal structure of the glass. The disk appears to have a *strong* diameter, and a *weak* one at 90° from the first. This has shown from first optical tests, when we turn the glass down on edge for testing. It hangs in a wide steel band lined with a very thick cushion of fine felt. While the spherical surface shows as a nearly perfect surface of revolution when the best (strong) diameter is vertical, it sags sufficiently when rotated so that the weak diameter is vertical, to cause an appearance of astigmatism, the radius of curvature of the vertical diameter becoming 0.2 inch shorter than that of the horizontal diameter; the radius of curvature is approximately 84 feet.

Furthermore, the very slight heating of the front surface during polishing causes a slight flexure and consequent lengthening of the radius of curvature. Now on account of the *weak diameter* this flexure is not symmetrical along all diameters, but is greatest on the weak one. The ends of the weak diameter therefore become slightly *low* during polishing, and are therefore not acted upon enough, and are therefore high after the mirror has hung all night and come to normal condition. Thus there is a constant tendency to *introduce* astigmatism during polishing. This effect is reduced by extremely *light* polishing, by counterpoising the full-size polishing tool. The two results, flexure from *weight,* and astigmatism from polishing, are of course intermingled, and make the tests very troublesome. I shall probably be obliged to bore 48 or 72 holes in the back of the glass, a little more than half way through, to enable me to introduce counterpoised levers for lateral support of the glass, thus eliminating the tendency to sag when turned on edge. But I fear that the slight temperature changes which are unavoidable when the telescope is in use will cause the mirror to appear astigmatic much of the time when it is in use in the telescope.

I am extremely anxious (now that my health is better, and I have a first-class optician in my private optical shop) to continue the experiments on the "new curves" for the new type of Cassegrainian giving an improved field. I am having several fine orders for mirrors up to 30 inches diameter and there is indeed a great awakening of interest in reflecting telescopes, the world over, as is shown by the numerous letters I have from American and European astronomers about mirrors, and inquiring about the best type of mounting. All of which, in my opinion, makes it extremely desirable that the new type be most thoroughly tried out. Not only is the improved field of great importance in most work, but the *short tube* and *small dome* very greatly reduce the cost of the completely housed instrument.

There is however one serious requirement with the new curve, in order that the greatest improvement may result. This is the matter of *curved* photographic plates. I would like very much to have your opinion of the seriousness of this point, after seeing the following tables. Let us compare first a telescope of the new type with resultant focal ratio of 6¼ to 1 (secured by making the large mirror 2½ to 1 and magnifying 2½ times with the small convex), with a Newtonian with paraboloidal mirror, with focal ratio of 6¼ to 1. The following tables give the size and shape of the images given by the two types at various angular distances from center of the field.

You will notice that with the paraboloidal mirror the gain with the curved plate is very slight, and the image is still an "arrow-head." While the new curves require only a very slight curvature of the photo plate to give a very great gain in the smallness of the images, while these images are ***round***.

"New curves," 6¼ to 1 resultant focal ratio

	With flat photo-plates giving ellipitical images	With curved photo plate-giving *round* images
at 5′ from center of field	0″.4 × 0″.2	0″.1
at 10′ " " " "	1″.6 × 0″.8	0″.4
at 15′ " " " "	3″.7 × 1″.8	1″.0
at 20′ " " " "	6″.5 × 3″.2	1″.7
at 25′ " " " "	10″.3 × 5″.0	2″.7
at 30′ " " " "	14″.8 × 7″.2	3″.8
at 35′ " " " "	20″.1 × 9″.8	5″.2
at 40′ " " " "	26″.0 × 12″.8	6″.9
at 45′ " " " "	33″.3 × 16″.2	9″.0

The radius of curvature of the photo plate in this case should be 0.73 times the resultant focal length. For a telescope of 24 inches aperture and 150 inches focus (ratio 6¼ to 1) a circular photo plate 4 inches in diameter would just include a field 1½° in diameter (45′ radius) and the curvature of this plate would be such that it would be 0.018 inch deep at the center. For a 60 inch mirror, focal length 375 inches (6¼ to 1) the corresponding photoplate would be 9.75 inches in diam. and 0.045 deep at the center.

With the new curves the gain by the use of the curved plate is so marked that is seems clear that if the new curves are used at all, curved plates will be used with them. On the other hand, in the case of the parabola the gain by the use of curved plates is so slight that it seems clear that curved plates would never be used here. Therefore in the next table I give the size of image for only (1) new curves with curved plates; and (2) parabola with flat plates. These tables compare the size of the images at different distances from center of field for the *new curves* and the *parabola* for focal ratios *9 to 1* and *12 to 1*.

You will notice that the gain in smallness of images with the "new curves" is still very marked for the focal ratio 9 to 1 and 12 to 1, but that the comparative *gain* falls off rapidly as the focal ratio is increased. This is of course because the parabola gains (in smallness of image) as the *square* of the focal ratio, while the new curves gain only directly as the focal ratio. You will notice, too, that while the gain with the new curves for images not very far from center of field is enormous, this *gain* decreases rapidly for large

Paraboloidal mirror, 6¼ to 1 focal ratio

	With flat plates, giving "arrow-head" images	With curved plates, still giving "arrow-head" images
at 5′ from center of field	1″.5 radial length of "arrow-head"	1″.42 radial length of "arrow-head"
at 10′ " " " "	3″.0 " " " "	2″.84 " " " "
at 15′ " " " "	4″.5 " " " "	4″.26 " " " "
at 20′ " " " "	6″.1 " " " "	5″.68 " " " "
at 25′ " " " "	7″.9 " " " "	7″.10 " " " "
at 30′ " " " "	9″.8 " " " "	8″.52 " " " "
at 35′ " " " "	11″.6 " " " "	9″.94 " " " "
at 40′ " " " "	13″.5 " " " "	11″.36 " " " "
at 45′ " " " "	15″.3 " " " "	12″.78 " " " "

The radius of curvature of the photo plate in this case is 0.5 times the focal length.

	New Curve resultant ratio 9 = 3 × 3 curved plates	Parabola focal ratio 9 to 1 flat plates	New Curve resultant ratio 12 = 4 × 3 curved plates	Parabola focal ratio 12 to 1 flat plates
at 5′ from center of field	0″.1 round image	0″.8 arrow-head image	0″.07 round image	0″.5 arrow-head image
at 10′ " " " "	0″.4 " "	1″.6 " "	0″.3 " "	0″.9 " "
at 15′ " " " "	0″.8 " "	2″.5 " "	0″.6 " "	1″.4 " "
at 20′ " " " "	1″.4 " "	3″.4 " "	1″.1 " "	1″.9 " "
at 25′ " " " "	2″.2 " "	4″.3 " "	1″.6 " "	2″.4 " "
at 30′ " " " "	3″.2 " "	5″.3 " "	2″.3 " "	3″.0 " "
at 35′ " " " "	4″.4 " "	6″.4 " "	3″.1 " "	3″.6 " "
at 40′ " " " "	5″.7 " "	7″.6 " "	4″.1 " "	4″.3 " "
at 45′ " " " "	7″.2 " "	8″.8 " "	5″.2 " "	5″.0 " "

distance from center of field. This is because with the new curves the size of image increases as the square of the distance from center, while with the parabola this size increases as the first power, the focal ratio remaining constant.

But even with these conditions the gain seems to me to be enormous, from both points of view, namely, the improvement of field and the great economy of construction of tube and dome, to say nothing of convenience in observing. The length of tube and diameter of dome are reduced practically to *one-third*.

There seems to be no hope of trying the new curves in the Obsy. optical shop, hence I am trying to secure the assistance of some of the research unds. I wrote Professor Cross of Boston Tech., who is favorable to a grant from the Rumford und. He asks me to write full particulars to E. C. Pickering, also. I am writing you and Stratton n this country, and H. H. Turner and Dr. Gill n England (as I am a "Foreign Associate" of the R. A. S.)[10] I hope to secure funds to demonstrate he new curves fully on a large scale in my own optical shop, and by means of photographs with telescope of the new type. The demonstration ould be made *entirely* in the optical shop by means of photographs of out-of-axis images; and *hree* types could be compared, namely: the parabola, the Cassegrainian, with parabola and hyperola, and the Cassegrainian with the *new curves*. But most astronomers would be much better satised with photographs of actual star-fields. This would require mounting the mirrors in good cells nd in a good skeleton tube, and attaching this to n existing mounting. Campbell at Lick and Lowell at Flagstaff would cooperate, I am sure, in the latter respect, in case Hale should object to my using an existing mounting here; I hardly anticipate any such objection, but Hale is certainly not normal, nor responsible.

The demonstration of the new curves appears to me to be of profound and universal importance in Astronomy, especially at this critical epoch of the introduction of photography and reflectors. I would be most grateful if you would say or write a good word for me in this work, when opportunity offers. Do you know of other "funds" beside the Rumford, the Draper, and the research fund of the National Academy and can you name some of the trustees of the latter two funds? Does Franklin Institute have a research fund which would be available?

I should be very glad to have a letter from you about the matter. I would try to get a grant from the Carnegie Institution for this purpose, except for the peculiar conditions existing. On account of the fact that the Carnegie Institution is supporting two great observatories, The Solar here and the one in South America, it would probably be difficult or impossible to get a grant for any object related to Astronomy.

Sincerely yours
G. W. Ritchey

P.S. The optical tests needed in making the new curves are not much more difficult than those required for the paraboloid and hyperboloid, and the former are as rigorous as the latter. I have completely worked out the methods of this testing.

One objection which has been made to a telescope with new curves is the same objection which applies to all Cassegrainian and Gregorian forms, namely: the slight change of distance between the large and small mirrors due to temperature changes introduces a considerable change of focal length ("resultant" or "equivalent") and this of course changes the scale of the photograph. But since the skeleton tube is so very short and light with the "new curves" I see no reason why we cannot use a "near" *invar* in its construction. Professor Stratton agrees with this view.

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[10] The Royal Astronomical Society. He was made a Foreign Associate" in recognition of his work on this reflector and his other achievements.

Pasadena, Calif.
Oct. 27th, 1912

My dear Dr. Thomson:

I was *surprised* and *pained* and *pleased* to receive your letter enclosing check for $250.00 to help out on the demonstration of the "new curves." With this assistance I have already got the work on the mirrors started in my own optical shop, and I confidently expect that it will go on without interruption. Mr. Schrock is in immediate charge of my shop; he was my most valuable assistant in making mirrors of the 60-inch reflector. We will carry on the work on the new curves at the same time with the making of a 30-inch mirror (paraboloid) for the English Observatory at Helwan, Egypt, for which Professor Turner of Oxford secured the necessary funds.

In the Observatory optical shop we have laid aside for the present the 100-inch disk on which we have been working for nearly a year. We will next try another 100-inch disk which the glassmakers have ready, which they say is very homogeneous, but which is only between 7 and 8 inches thick.

I have made some fine negatives showing the 100-inch optical room, the glass, machine, polishing tools, etc.—a series showing the glass in different stages and positions. Some of them show something of the bad internal structure of the glass.

Professor Cross wrote me, asking in effect, whether a grant to me for the new curves, from the Rumford fund, would be of immediate use, or whether it might have to lie unused until I could raise the entire amount necessary. I replied that the work is already begun in my own optical shop, where it can be done most economically, and that, with a grant from the Rumford fund, the *optical* work can be nearly, if not quite, completed. I informed him that I had recently received a gift of $250.00 for the purpose, but I did not state from whom.

Thanking you most heartily for your kind interest and assistance, I remain

Sincerely yours
G. W. Ritchey

Pasadena, Calif.
Nov. 27, 1912

My dear Dr. Thomson

You of course know of the action of the Rumford Committee in voting $500.00 for my experiments with the new curves. Please accept my sincere thanks for your part in this action, which I know was a large part. Work on the new mirrors is going forward rapidly. I hope you received the prints of the 100-inch glass and machine, in good order; also my letter acknowledging your generous gift of $250.00 for trying out the new curves.

I am deeply interested in the suggestion to use my astronomical photographs in assisting with the optical work. I hope this will develop into a plan of great usefulness in many directions.

I have time for only these few lines today.

Very sincerely yours
G. W. Ritchey

Pasadena, California
January 9, 1913

My dear Dr. Thomson

Work on the mirrors for the "new curve" telescope is progressing most satisfactorily; we shall have them ready to try on the sky this coming summer. . . .

Very sincerely yours
G. W. Ritchey

Pasadena, California
July 12, 1913

Dear Dr. Thomson

. . . I am exerting every possible effort to improve and establish on a sound basis my private optical laboratory, where the new curves and other vital experiments are being thoroughly worked out. I have had great and unexpected encouragement (not yet financial) from several of my English astronomical friends, especially R. A. Sampson, Astronomer Royal of Scotland who wants me to make for his observatory a 36" reflector with either my new curves or a modification of them which he has worked out mathematically, in which the *field* is still further enlarged and *flattened* by means of a two-lens corrector which would be placed above the photographic plate and which would be only a little larger than the field photographed. I shall write you further about this soon; I wish I could see you!

I have been making (for a year) a most strenuous and exhaustive (and exhausting) study of the original 100 inch disk. Perhaps you have heard (through Hale) that I have succeeded in overcoming most of the difficulties which a year ago seemed insurmountable—that I now have on this glass an almost perfect surface of revolution, and have found a method of support by which the surface of revolution holds when the glass is turned on edge, on all diameters. . . .

G. W. Ritchey

Pasadena, California
Oct. 14th, 1913

My dear Dr. Thomson:

The reflecting telescope which we are making with the "new curves" has an aperture of 20 inches. The large mirror has a focal ratio of only 2½ to 1; the convex mirror, 7 inches in diameter, magnifies 2½ diameters; so the resultant focal length is 2½ × 2½ to 1 or 6¼ to 1, and the resultant focal length is 125 inches. I have used this comparatively short resultant focal ratio in order that photographs made with the new telescope shall be more directly comparable with these which I have already made with the 24-inch at Yerkes and the 60-inch here than would be possible with a greater focal ratio.

The figuring of the 20-inch with focal ratio 2½ to 1 has of course been difficult on account of the very large departure from the nearest spherical surface when so great an angular aperture is used. In addition, the new curve for the large mirror departs a little farther still from the nearest spherical surface than does the paraboloid. For the constants given above (2½ × 2½) the "new curve" *intervals* measured along the axis, (which intervals correspond to the differences of radius of curvature of the successive zones of the large mirror) are larger than the corresponding paraboloid intervals in the proportion of 8 to 7 almost exactly; and this proportion holds for all of the intervals, with errors far smaller than errors of measurement. Therefore we first *parabolize* our large mirror, testing it continually both at the center of curvature, and at its focus in combination with a full-size optical plane which we have made for the purpose. After securing a perfect paraboloid we then go a little farther with the same methods of figuring, tools etc., used in parabolizing, carrying the curve beyond the paraboloid, and still testing in both of the ways named above. The *quantitative* test at the center of curvature now becomes the more important one, since the mirror no longer *appears flat* when seen at its *focus,* in combination with the optical plane mirror. Instead it appears as a surface of revolution whose section is

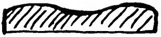

FIG. 3.

It is a great help, however, to have this latter test available also, for we thus see the mirror as a whole, and the apparently curved surface seen must be a *smooth* one. To save an additional reflection from a small 45° plane mirror we have cut a central hole in the 20-inch concave mirror. This allows the following very simple and economical arrangement of mirrors when testing either the paraboloid or the "new curve" at the *focus,* i.e. in combination with the full-size plane mirror. No small diagonal mirror is necessary. The alignment or collimation is easily secured by making the edges of the two mirrors equidistant all around by *calipering* (or measurement), the distance apart being small. The plane mirror slides out of the way in a suitable track when testing the concave mirror at its center of curvature.

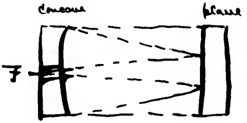

FIG. 4.

The large plane mirror serves for *three* reflections. The artificial star and knife edge are at *F*. The distance between the two mirrors is of course a little less than half the focal length of the concave one.

The "new curve" on the large mirror having been secured in this way, we then figure the 7-inch

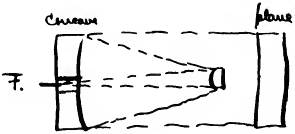

FIG. 5.

convex mirror, testing as follows, the concave and plane mirrors having been finished and silvered.

All that is necessary is to figure the convex mirror to make it appear *flat* when seen from F with the knife-edge test. A strange paradox is that to accomplish this we do not have to know the nature or equation of the *convex* mirror. It is in fact no more difficult to test and to figure than is the *hyperboloidal* convex mirror of the usual Cassegrainian form of reflector.

One other point in the testing is worthy of mention. Since the new curves allow a large *field* at F, the convex mirror must of course be a little larger than is necessary for the central or axial cone of rays only, in order to fully illuminate the edges of the field. The point in question is: how shall we test this outer ring of the convex mirror, since we do not see it at all when testing with the axial cone? We place the artificial star exactly in the axis at F. The large concave and the small convex mirrors are carefully collimated; hence the beam reflected *from* the large concave mirror will be a parallel beam, and parallel to the axis. Now the large plane mirror is slightly rotated, from its *square* position, through an angle equal to one-fourth the angular diameter of the field decided upon. The beam of rays now returned from the large plane mirror is a parallel beam, but makes an angle with the axis equal to the semi-angular diameter of the field. Viewing the reflected image at the edge of the field (near F) we now see one side of the outer ring of the convex mirror in relief, and this ring can now be figured and tested until it appears as a *flat* continuation of the *apparently* flat surface of the convex mirror.

The work thus far shows that there can be no question that the new curves give a large field of extremely small *round* images (as calculation showed that they should). But the question of degree of curvature of this large field, the question of distortion of angular position of these images (called angular distortion of field), and many allied questions remain to be investigated experimentally.

I have an interesting incident in this connection to report to you. Just two years ago Professor R. A. Sampson, Astronomer Royal of Scotland wrote me asking if I would make for him—for the Observatory at Edinburgh—a 24-inch paraboloidal mirror of 20 or 24 feet focal length. He complained of the great expense of the long tube and large dome needed for such a focal length—said that this focal length was necessary for his special work in order to secure large field and large scale—and asked if I could suggest any more economical way of securing what he needed. Chrétien and I had been at work on the new curve for more than a year. I wrote Sampson about the great promise of the new curves, which allow a very short tube and small dome. He was greatly interested, and immediately took up the subject mathematically to satisfy himself of the possibility of such a result. He worked out general formulae, but did not find any curve to satisfy the conditions, because he did not go *beyond* the paraboloid. He wrote me that he had not been able to confirm our results. I gave him additional data stating that our curve was *beyond* the paraboloid. He applied this case to his formulae and secured a result identical with ours so far as the great field of round images is concerned, but he thought he found this field to have a much greater curvature than we had found theoretically. Partly on this account perhaps, and probably also to investigate along somewhat different lines from ours, and further, to strive for a still *larger* and a *flat* field, he now investigated mathematically the modified problem of enlarging and flattening the field by means of lens combinations. He secured a result (mathematically) which he considered highly satisfactory for size and flatness of field, but which involves loss of light by reflection at six surfaces of lenses and by absorption through four lenses, two of which are thick. He has published his mathematical work in Phil. Trans. of the Royal Society. He wrote me for my criticisms from a practical point of view, which I gave. He then proposed to modify his plan so as to save two of the reflections and two of the absorptions mentioned above, thus securing however, a less perfect field. There the matter stands at present. He says he wants me to make the optical parts for him, and that his instrument will be not less than 30 inches aperture nor more than 40 inches. Turner of Oxford wrote me that he had advised Sampson to get me to do the optical work. I cannot say how that will result, but I have written Sampson that I shall be glad to do this work for him, on account of my very great interest in the problem. In the meantime we are carrying on our original plan of investigating *experimentally* the type with two mirrors only—no lenses.

Very sincerely yours
G. W. Ritchey

Pasadena, California
Nov. 3, 1913

Dear Dr. Thomson:

Your recent letter is just received. I wrote Professor Cross a full account of the progress on the "new curves" at the same time that I wrote you on the subject; I described to him the tests which we have developed, and told him fully about Sampson's theoretical work along this line, and how it originated.

I have great hope that, if the field proves too highly curved with the two mirrors alone, we shall be able to work out a corrector such as you suggest, to be placed near the secondary (resultant) focus, so that this lens need not be much larger than the field photographed. With our present 60-inch Mt. Wilson reflector, when used as a *Newtonian*, the focal length is 25 feet, so the focal ratio is as 1 to 5. In making my finest celestial photographs I usually reduced the aperture to 50 inches, to secure a larger field well covered. But even with this latter focal ratio, 1 to 6, the *useful* field is not more than *3 inches* (or about 30 minutes of arc) in diameter; and even for this field the star-images near the edges have a very strongly-marked "arrow-head" shape, with the point or apex toward the center of the field. From this it will be seen that the size of correcting lens required, even for so large a telescope as 50 inches aperture, would not be great, to give a field of two or three times the diameter (or four to nine times the area) of the useful field of our 60-inch Newtonian. . . .

Very sincerely yours
G. W. Ritchey

Pasadena, California
December 5th 1913

Dear Dr. Thomson:

Your letter enclosing check for $50.00 was received. I thank you heartily for it, and shall use it to forward the work on the new curves and on the enlarged negatives. . . .

Very sincerely
G. W. Ritchey

Pasadena, California
August 12, 1914

Dear Dr. Thomson:

I am sending you today by mail a set of blueprints of the mounting of the 20-inch new curve telescope. The optical parts are entirely finished, and we are ready to proceed with the very simple mounting for which Mr. Schrock has just finished the drawings. The mounting is in part a temporary one; the skeleton tube, the polar axis frame, and some other parts being designed to be built of hard wood instead of metal. The cells for the mirrors, the double-slide plate-carrier, all of the bearings, the driving sector etc. are of course all of metal; these will be the principal expense. To save the expense of a driving clock I shall use temporarily an Edison phonograph motor of the largest size. I am confident that the mounting, made in this way, will be ample for the purpose of testing the new curves thoroughly on the sky, by means of photographs of large star-fields, and with exposures up to 30 minutes duration. The cells, double-slide plate-carrier etc. will of course serve perfectly for a permanent mounting later.

I have taken the detail drawings of the mounting to Mr. Wingren, who does all of my metalwork, and we find that the complete temporary mounting as shown in the drawings, can be built for about $600.00. It now seems impossible for me to spare this money this summer, and after long consideration of the matter, I have decided to ask your opinion of the plan of presenting the matter to Mr. Dunham, sending him a set of the drawings, and asking him if he will assist me again for this amount. I have much hesitation about doing this, and would prefer waiting until I can pay for the mounting myself, were it not for the urgent importance of the subject, and my obligation to furnish definite results to the Rumford Committee as soon as possible.

The 101-inch mirror appears more and more promising. We are now to the *parabolizing* stage—the final stage, which we expect to complete in about a year.

Very sincerely yours
G. W. Ritchey

Pasadena, California
September 16, 1919

Dear Dr. Thomson:

. . . Mr. Hale gave the impression in scientific circles that he took the 100 inch mounting out of my control because I insisted on adopting the new short type of design (the new curves); he gives the impression in one of his annual reports. . . .

. . . I have many technical matters also which are partially worked out (such as the "new curve" telescope and the apparatus for planetary photography, and the new emulsions for photographic plates for astronomical photography) none of which it is possible to continue here under the present conditions.

The question is forced upon me whether it is possible for me to try to continue my astronomical work under such conditions as exist here. Possibly these conditions may improve; they may get worse.

I do not like to contemplate giving up my astronomical work and retiring to my lemon and orange groves, a defeated man, my life work appropriated by Mr. Hale, a millionaire, who already has more scientific honors and distinction than he knows what to do with. He has reached a place where scientific work and honors are not enough; he must have vast *power* also; power to dictate the welfare, the making or unmaking, *the positions* even, of scientific men both in this observatory and outside of it—as far as his influence can possibly reach. Dr. Stratton of the Bureau of Standards is a friend of mine, who says I should have an opportunity to work out my instrumental and observing and photographic problems in my own way, without dictation from Hale or any one else. I have told Stratton about my plans in these matters, and he agrees that my plans are sound and of vast promise. But the opinion has been forced upon me that he is afraid to assist me in any way for fear of offending Hale —that he is afraid of Hale's power as a scientific politician and dictator.

[George Ritchey left this letter
uncompleted and unsigned.]

Mount Wilson Solar Observatory
Pasadena, California
October 15, 1919

Dear Dr. Thomson:

Since finishing our optical work for the government, and completing the smaller mirrors for the 100 inch telescope, I have given much time and work and consideration to the question of my future work in astronomy. . . . [This is followed by an account of the unfriendly treatment which Ritchey has experienced at the observatory.]

[This letter is left unsigned.]

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519 North Mentor Avenue
Pasadena, California
January 24, 1920

Dear Dr. Thomson:

I want to thank you most sincerely, both for myself and in behalf of Mrs. Ritchey, for your very kind and helpful letter of Jan. 13th. I regret that on account of my absence from Pasadena on business it has remained unanswered until now. I judge from your letter that you have already learned that my connection with the Carnegie Institution and the Mt. Wilson Observatory was severed on October 31, 1919 . . .

[Again, this is followed by a detailed review of his many accomplishments during his long years at the observatory, and further remarks about the treatment to which he was subjected there.]

. . . (h) *Unfinished Technical Problems*

Perhaps I should mention, in closing, several technical problems to which I have devoted much time and thought for many years, and which I believe are at least as important as any of those described above.

(1) The reflecting telescope with mirrors with entirely new curves, which give a large field, and at the same time allow the telescope to be made very *short,* compact, rigid, with much smaller dome.

(2) Reflector mirror disks "built up" of plates of glass, with *ribbed* arrangement, the whole cemented or fused together. . . .

George W. Ritchey

R.F.D. Azusa, California
[no date–probably written
either in 1921 or 1922]

Dear Dr. Thomson:

. . . In regard to the "new curve" telescope with large concave and small convex mirrors, which give a large field and a very short tube, this can be tested optically (for *extent* of usable field and for *curvature* of the field of round images) *in the optical shop,* in combination with a full-size optical plane mirror which can be rotated slightly to give a returning beam of parallel rays slightly oblique with reference to the axis, to correspond to the oblique parallel beam from an out-of-axis star. I have not been able to make this test yet, but I have the full-size optical plane mirror ready. I expected to have an optical and instrument laboratory at the orange grove, to finish the solution of this problem and others; I was ready to build this laboratory in the early spring of this year; but the worst freeze in the history of the Southern California Citrus industry late in January wrecked the hopes and prospects of many thousands of families here, including ourselves.

. . . when the new curve reflector is demonstrated, it will, I am confident, give us a much better instrument (because of the large field, and the compact, rigid tube) and a much more economical one. The skeleton tube of the new type is less than half the length of the 60-inch type, even if we make the focal ratio of the large mirror 3 to 1 instead of 2½ to 1 as in the 20-inch experimental telescope which I have nearly finished. And the relative length of the part of the tube above the declination axis is still less, so that the internal diameter of the dome for the new type is only 2/5 that for the 60-inch and 100-inch type. Since the cost of a dome varies somewhat between as the *square* and the *cube* of the diameter, the dome for the new type would cost about 1/10 as much as the dome for the 60-inch type. In the new type the observer works always near the floor, near the center of motion of the instrument; no great observing platform moving up and down the interior of the dome is necessary, as in the 60-inch type. The comfort and convenience of the observer will contribute to refinements in the use of the instrument. Anyone who sees the almost prohibitive labor and difficulty of using the Mount Wilson 100-inch, especially at the Newtonian focus, cannot fail to be impressed by the great promise of the new type in the convenience and comfort of the observer. . . .

Sincerely yours
G. W. Ritchey

CUNO, GERMANY, AND THE COMING OF THE RUHR OCCUPATION: A STUDY IN GERMAN-WEST EUROPEAN RELATIONS[1]

ALFRED E. CORNEBISE

Associate Professor of History, University of Northern Colorado

IN 1922 major political changes, forthcoming in several countries in rapid succession, had great bearing on the outstanding problem facing Europe: the now perennial failure to solve reparations. On January 15, 1922, Raymond Poincaré came to power in France as premier and foreign minister. Long notorious for his advocacy of a rigid policy toward Germany regarding reparations payments and French security, Poincaré embraced certain policies of Marshal Ferdinand Foch and Georges Clemenceau who earlier had attempted, with rather limited success, to arrange the Treaty of Versailles to France's complete satisfaction. The Treaty neither in letter nor in practice had resulted in French security to the desired degree, nor in full reparations returns. Consequently, the French embraced an increasingly stiff position under Poincaré's leadership which ultimately led to the Ruhr occupation, initiated on January 11, 1923.[2] Central to Poincaré's policy was the notion of "productive pledges," a plan which envisaged the seizure of German industry in the Ruhr to guarantee reparations payments.[3]

In Britain, Bonar Law succeeded David Lloyd George as prime minister on October 23, 1922. News of this was received in Germany with some misgivings, for Berlin had grown accustomed to Lloyd George's indulgence. Both Bonar Law and his foreign secretary, Lord George Curzon, were convinced that the political fences with France, left in disrepair by the former prime minister, must be mended, though the new government later made it clear that it would not sanction any policy detrimental to Germany. This new course was accordingly a matter of interest in Berlin and Paris, but certain elements of contradiction often led to frustration in those capitals. The Germans, while not being able to fathom British policy altogether, did note that Bonar Law, who was seriously ill, was in any case given to a foreign policy of "benevolent impotence." This was explained in part by his feeling that, while domestic policy was worthy of serious exertion, foreign policy was "an unalloyed game of chess," and hence an objective exercise to be pursued with a

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[1] The author wishes to acknowledge release time granted by the Research Committee of the University of Northern Colorado, which aided in the preparation of this manuscript. The author also wishes to acknowledge permission from Harald Boldt Verlag to quote from the publication, Karl-Heinz Harbeck, ed., *Das Kabinett Cuno: 22. November 1922 bis 12. August 1923* (*Akten der Reichskanzlei: Weimarer Republik*) (Boppard-am-Rhein, 1968).

[2] The fear and frustration of France has often been discussed, analyzed, and documented. See, e.g., Roger Picard, *L'Allemagne et la France* (La Flèche, 1924); David White Trafford, "The Ruhr and French Security as Reflected by the British and French Presses, 1923," *Social Science Series*, Pub. Univ. of Indiana, **10** (Bloomington, 1951): pp. 125–144; Louis F. Aubert, *Sécurité de L'Occident: Ruhr, Rhin* (Paris, 1946); and Lucien Graux, *Histoire des Violations du Traité de Paix* (4 v., Paris, 1921–1927).

Regarding the Ruhr, its significance, history, and its being the logical goal for French action, see: Hermann Corsten, *Bibliographie des Ruhrgebietes* (4 v.), especially volume 1: *Das Schriftum über wirtschaft und verwaltung der Jahre 1800–1939* (2nd ed., Düsseldorf, 1957); Wilhelm Helmrich, *Das Ruhrgebiet: Wirtschaft und Verflechtung* (2nd ed., Münster, 1949); Kurt Anker, *Rhein-Ruhr-Saar in Geschichte, Kultur und Wirtschaft* (Berlin, 1923); Henri Brenier, *Why France is in the Ruhr* (Marseille, 1923); Guy Greer, *The Ruhr-Lorraine Industrial Problem. A Study of the Economic Interdependence of the Two Regions; and their Relation to the Reparations Question* (New York, 1925); René Pinon, *La Bataille de la Ruhr, 1923* (Paris, 1924); Norman J. G. Pounds, *The Ruhr. A Study in Historical and Economic Geography* (Bloomington, 1952); and Joseph Marie Léon Coupaye, *La Ruhr et L'Allemagne* [Preface by Louis Adrien Dariac] (Paris, 1922). A recent study, stressing French views and especially the development on Poincaré's policy, is Denise Artaud, "À propos de l'occupation de la Ruhr," *Revue d'Histoire Moderne et Contemporaine* **17** (1970): pp. 1–21.

[3] For a discussion of "productive pledges," see Harold Nicolson, *Curzon: The Last Phase, 1919–1925. A Study in Post-War Diplomacy* (Boston, 1934), pp. 360–362; and Henry Tureman Allen, *My Rhineland Journal* (Boston, 1923), pp. 408–409, 415–416. Allen was the commander of the American troops on the Rhine at Coblenz and the unofficial American observer on the Rhineland High Commission. He was well informed and in his *Journal* and in a later study, *The Rhineland Occupation* (Indianapolis, 1927), he discusses this period in detail.

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certain aloofness. As one German scholar has noted, he followed the ancient British watchword: "Wait and See."[4]

A few days following Bonar Law's accession to power, Benito Mussolini in Italy made his so-called "March on Rome" on October 28, resulting in the king's mandate of October 29 to establish a cabinet. Intent upon consolidating his position at home, Mussolini had perforce to turn his attention soon to the international sphere as the consequence of the convening, on November 20, 1922, of the Lausanne Conference to conclude peace between Turkey and Greece, but which considered other matters as well. Among the latter were Mussolini's attempts to obtain additional territorial concessions. But Mussolini failed in his quest and, especially incensed at the British, whom he held responsible for his ill-success, undertook to exploit the growing dissension between France and Britain over the reparations problem by supporting the former. For his participation in France's continental policy, Mussolini also hoped to obtain substantial concessions from France, e.g., a French–Italian trade pact, which would make available raw materials from French colonies for use in Italian industry, thereby enabling the two Latin countries to counter the economic dominance of the Anglo-Americans. But Poincaré hesitated to destroy the bridge to London and allowed Italy only to draw nearer to France, not to embrace her. He did recognize, of course, the advantages of Italian support for his productive pledges plan, which justified a measure of friendship toward Rome.[5]

The fourth major governmental change occurred in November. On the fourteenth, the German chancellor, Joseph Wirth, resigned. President Friedrich Ebert on November 16 empowered Dr. Wilhelm Cuno, director-general of the Hamburg-American Steamship Line of Hamburg, and a former member of the Reich Economic Council, to form a government. Following protracted negotiations, necessitating even the intervention of Ebert, Cuno completed his cabinet on November 12, with the exception of the foreign minister's post. The new government was installed on the following day with a brief joint meeting of the outgoing and incoming cabinets.[6]

Cuno, though standing near the Center [*Zentrum*] Party, had been commissioned by the president to form a cabinet of "non-political experts," hence above parties. As an expert in financial and economic affairs, and a businessman of world-wide experience, Cuno was well known abroad. While a member of the Reich Economic Council, he had participated in several of the reparations conferences, so numerous in the early 1920's. Highly esteemed personally, Cuno enjoyed considerable support in business, military, and nationalist circles; it has often been remarked that he was on good personal terms with General Hans von Seeckt, head of the Reichswehr. A man of elegant manners and bearing, and possessing great personal charm, in less demanding times he might have brilliantly graced the office of the chancellor. One is reminded of a remark made earlier regarding Cuno and his prospects as a future chancellor ascribed to the former Reich foreign minister, Walther Rathenau: "We shall have to smoke even that cigar—if only because of its excellent wrapper."[7] But in the time of strife, and under the press of events, and partially resulting from his own inclinations, Cuno moved increasingly to a position of intransigence *vis-à-vis* France. At home he moved ever-farther to the political right, losing touch with the parties of the left, especially the Socialists (SPD), who, among other things, enjoyed considerable power in the important Prussian government. The selection of Cuno to head a "non-political" cabinet perhaps represented Ebert's loss of faith in the parliamentary process, an ominous development. As one scholar has observed, the establishment of Cuno's government was an "important step away from the parliamentary republic of 1919–1922 towards the presidential dictatorship of 1930–1933 which served as a prelude to the Third Reich."[8]

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[4] Ludwig Zimmermann, *Deutsche Aussenpolitik in der Ära der Weimarer Republik* (Göttingen, 1958), p. 135. For an account of these events, see also Nicolson, *Curzon*. For British-French relations, see René Pinon, *L'avenir de L'Entente franco-anglaise* (Paris, 1924); and Arnold Wolfers, *Britain and France Between Two Wars* (New York, 1940).

[5] Zimmermann, *Deutsche Aussenpolitik*, pp. 144–145. For an account of Italian-German relations in this period, see Jean Baptiste Duroselle, *Les relations internationales de L'Allemagne et de L'Italie de 1919 à 1939* (Paris, 1967).

[6] Karl-Heinz Harbeck, ed., *Das Kabinett Cuno: 22. November 1922 bis 12. August 1923 (Akten der Reichskanzlei: Weimarer Republik)* (Boppard-am-Rhein, 1968), pp. 1–3. This volume is a most useful source of materials, with copious notes. The author of this paper has drawn heavily from it.

Ebert had also considered Wilhelm Mayer-Kaufbeuren, the German ambassador in Paris, and the *Oberbürgermeister* of Cologne, Konrad Adenauer, for the chancellorship. See *ibid.*, note 1, p. 1.

[7] As quoted in Erich Eyck, *A History of the Weimar Republic*, Trs. Harlan P. Hanson and Robert G. L. Waite (2 v., Cambridge, 1962) 1: p. 227.

Cuno's cabinet was completed on the evening of November 22, when Baron von Rosenberg was called from his post as German ambassador in Copenhagen to become the Reich foreign minister. Rosenberg, an old hand at diplomacy from the days of the 2nd Reich, was generally considered a competent bureaucrat, but was not a leader to take the necessary initiative in a troubled era. Certainly he must have found the transition from the backwaters of the Danish capital to the maelstrom of Berlin to have been an unnerving one. Though he initially took firm hold of his duties, "more and more," as a German historian has recently observed, "he simply allowed the ship of state to drive before the storm." He was also far too inclined to place Germany in the tow of England without realizing that the change in governments there had developed to Germany's disadvantage.[9]

Cuno presented the new government's program to the Reichstag on November 24, hoping to create the impression of continuity with Wirth's so-called fulfillment policy regarding reparations.[10] Recognizing that reparations was the most pressing problem confronting his nation, he reaffirmed Germany's willingness to underwrite the "peaceful work of the reconstruction of the destroyed areas in France, which had borne the full force of the destruction of War." But Cuno departed from Wirth's policy when he asserted that Germany could only meet the treaty obligations from any surplus existing after essential German requirements were met, a position which he declared was in conformity with the Treaty of Versailles and the time-honored principle whereby the debtor must first meet, from his field, the needs of his family, farmhands, and farm animals, prepare and improve the land, and only then pay what he owed to his creditors. Thus, the expression, "first bread, and then reparations," though current in the Wirth era, was restated with a new emphasis. The new chancellor also urged that reparations be considered from practical and economic standpoints rather than from political ones, and appealed to the United States for aid in solving Europe's outstanding problems. Referring to the German Reparations Note of November 14, 1922, one of Wirth's last efforts to settle that vexatious problem, Cuno, embracing the Note as his own, reemphasized that Germany must have a complete moratorium on reparations in cash and in kind, except for deliveries for the devastated areas, for a period of three or four years and receive a foreign credit of 500,000,000 gold marks in order to stabilize her finances. He endorsed the policy previously advanced by certain foreign economic experts calling on Germany to develop a constructive policy of her own volition for supporting the mark, and promised that certain Reichsbank gold reserves could be used for this purpose. But, he warned, if this gold were wasted in an unsuccessful effort, it would mean total annihilation of the German currency. What was needed was confidence within Germany that efforts were being made to stabilize the currency, an impossibility so long as a "policy of ultimatums" prevented its appearance. He bitterly assailed Poincaré and others who accused Germany of deliberately evading her reparations payments, clearly an erroneous assumption, he stated, in view of Germany's deliveries to date.[11]

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[8] Godfrey Scheele, *The Weimar Republic: Overture to the Third Reich* (London, 1946), p. 67. See a brief discussion of Cuno in Zimmermann, *Deutsche Aussenpolitik*, pp. 133–134; in Otto Meissner, *Staatssekretär unter Ebert-Hindenburg-Hitler. Die Schicksalsweg des deutschen Volks von 1918–1945, wie ich ihn erlebte* (3rd ed., Hamburg, 1950), pp. 113–114; and in Max von Stockhausen, *Sechs Jahre Reichskanzlei: Von Rapallo bis Locarno. Erinnerungen und Tagebuchnotizen, 1922–1927* (Bonn, 1954), p. 56. Stockhausen often served as secretary for cabinet sessions.

[9] Zimmermann, *Deutsche Aussenpolitik*, p. 134. Also see discussion of Rosenberg in Viscount Edgar Vincent D'Abernon, *An Ambassador of Peace* (3 v., London, 1929–1930) 2: pp. 153–154.

Friedrich Sthamer, the German ambassador in London, and Carl-Ludwig Diego von Bergen, the German ambassador at the Holy See, had also been considered for this post, or so the press speculated. See Harbeck, *Das Kabinett Cuno*, note 1, p. 18.

[10] For the reparations problem, Germany's currency problems, and war debts, see, e.g., Philip Mason Burnett, *Reparation at the Paris Peace Conference* (2 v., New York, 1940); Costantino Bresciani-Turroni, *The Economics of Inflation, A Study of Currency Depreciation in Post-War Germany, 1914–1923*, Tr. Millicent E. Sayers (London, 1937); Karl Bergmann, *The History of Reparations* (Boston, 1927); Bernard Mannes Baruch, *The Making of the Reparation and Economic Sections of the Treaty* (New York, 1920); Harold Glenn Moulton and Constantine E. McGuire, *Germany's Capacity to Pay* (New York, 1923); Hans Ronde, *Von Versailles bis Lausanne. Der Verlauf der Reparationsverhandlungen nach dem ersten Weltkrieg* (Stuttgart and Cologne, 1950); Belgium. *Ministère des affaires étrangères. Documents diplomatiques relatifs aux réparations (Du 26 décembre au 27 août 1923)* (Brussels, 1923); Germain Calmette, *Recueil des documents sur l'histoire de la question des réparations (1919–5 mai 1921)* (Paris, 1924); Germany. *Denkschrift über die Zahlungsfähigkeit Deutschlands für die Wiedergutmachung* (Berlin, 1920); United States Department of Commerce (Bureau of Foreign and Domestic Commerce), *The Reparation Problem, 1918–1924* (Washington, 1924); and Dieter Bruno Gescher, *Die Vereinigten Staaten von Nordamerika und Die Reparationen, 1920–1924* (Bonn, 1956).

More recent studies include: David Felix, *Walther Rathenau and the Weimar Republic. The Politics of Reparations* (Baltimore, 1971); Fritz K. Ringer, ed., *The German Inflation of 1923* (New York, 1969); John G. Williamson, *Karl Helfferich, 1872–1924. Economist, Financier, Politician* (Princeton, 1971); and Sally Marks, "Reparations Reconsidered: A Reminder," *Central European History* 2, 4 (1969): pp. 356–365.

Yet while stressing the continuation of Wirth's policy, at the very least Cuno's statements reflected a new emphasis which certain scholars consider as basically opposed to Wirth's program. In fact it must be concluded that Cuno embarked upon a much more provocative policy as subsequent reparations proposals would reveal, and, given Poincaré's attitude, a clash between the two was almost a foregone conclusion, unless restraint could be interposed.[12] In any case, the chancellor's speech resulted in an overwhelming vote of confidence by the Reichstag on the following day. Parliament was then adjourned until December 4, and Cuno turned his attention to other issues.

Indeed, on November 24, the chancellor had been informed of developments concerning reparations in the Entente camp. George Theunis and Henri Jaspar, the Belgian premier and foreign minister respectively, had journeyed to Paris for a conference on the twenty-first, with Poincaré and other officials. The decision was made to convene a major reparations conference of the Allied premiers in Brussels on December 15, with a pre-conference to be held to draft strategy—which in the event was held in London. The German reparations expert, the *Staatssekretär* Carl Bergmann, then in Paris, sought to assess the reparations situation in the light of Britain's governmental change and the Paris meeting. He concluded that Bonar Law would not resist Poincaré, who seemed to be supported by Mussolini and the Belgians, and accordingly suggested that Germany await events before drafting another reparations plan.[13]

In any event, Cuno was determined to stand by the Note of November 14 and on November 27, the Foreign Ministry instructed David Fischer, the chairman of the German *Kriegslastenkommission* in Paris, to transmit to the Reparation Commission (Repko) a note to that effect, and to stress that in view of the worsening economic and financial situation in Germany, the Note of November 14 must be implemented immediately.[14]

This action, however, was rejected in Paris and Brussels. The German minister to Belgium, Otto Landsberg, reported to Berlin on November 29, 1922:

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[11] Cuno's speech is in Germany. Reichstag. *Verhandlungen des Reichstag*, Band 357, 9099–9105; and in Herbert Michaelis and Ernst Schraepler, eds., *Ursachen und Folgen vom deutschen Zusammenbruch 1918 und 1945 bis zur staatlichen Neuordnung Deutschlands in der Gegenwart* (8 v., Berlin, 1958—) **4**: pp. 419–422.

Also central to the Note of November 14 was the plan to float an internal and external loan; the entire proceeds of the foreign loan, and one-half of those of the internal loan, would go to the reparation account. See copy of the Note in Michaelis and Schraepler, *Ursachen und Folgen* **4**: pp. 416–419. This Note was drafted on the previous day and references to it sometimes bear that date. See discussion in Harbeck, *Das Kabinett Cuno*, note 2, p. 16. The Note was controversial, apparently satisfying no one. Even John Maynard Keynes, ordinarily a supporter of Germany, was unfavorably disposed toward it. A discussion is in Zimmermann, *Deutsche Aussenpolitik*, pp. 135–137; and in Harbeck, *Das Kabinett Cuno*, note 7, p. 17.

[12] Several scholars have suggested the extent of Cuno's departure from Wirth's policy, see, e.g.: "Whereas the Wirth government, under Rathenau's influence, wanted to pursue a policy of fulfilment, the Cuno government took a contrary attitude, intending to sabotage Reparations payments. Organization of resistance to the Allies was the new government's *raison d'être*. . . ."; in W. M. Knight-Patterson [pseud. See Wladyslav Wszebor Kulski], *Germany from Defeat to Conquest, 1913–1933* (London, 1945), p. 313; a rather too extreme statement. Note also: "He [Cuno] rebelled against the methods of his predecessors who, by compliance with every ultimatum, were reduced to successive demands for respite and so carried Germany from one date of payment to another without offering her any hope of solution. If his plans for a definite solution were refused and the Entente continued pressure, there was no other way than a resistance to the occupation of the Ruhr and any other coercive measures insisted upon by France. . . ."; in Werner Friedrich Bruch, *Social and Economic History of Germany from William II to Hitler, 1888–1938* (London, 1938), p. 163; a more judicious assessment.

[13] Bergmann's letter is in Harbeck, *Das Kabinett Cuno*, pp. 8–15. See also note 2, pp. 8–9.

George Theunis, also the Belgian minister of finance, was a well-known economics expert who had represented Belgium at the Paris Peace Conference; was later a member of the Repko, and a participant at the numerous conferences held in Europe in the early 1920's. For a brief account of these Belgian representatives, see Jane Kathryn Miller, *Belgian Foreign Policy Between Two Wars, 1919–1940* (New York, 1951), pp. 31–33.

[14] Harbeck, *Das Kabinett Cuno*, note 7, p. 17.

> Jaspar spoke to me in a most earnest way; he indicated that the German Note to the Repko was inappropriate, and would prevent France from bargaining. It would be necessary for Germany, in order to impress America and England, a course preferred by Belgium, and one which would prevent military measures from being taken, to make an immediate offer whereby German industry would guarantee a foreign loan for Germany. He intimated that he wished to avoid any joint French-Belgian action in occupying the Ruhr, but that this, without the suggested offer from German industry, might be necessary as a consequence of the pressure of public opinion. . . .[15]

Fischer also reported from Paris that the British considered the Note of November 14 to be transcended by events, and that new proposals should be advanced. Fischer had learned in addition that Bonar Law and Sir John Bradbury, the British representative on the Repko, were working on a new plan to forestall newly threatened drastic action against Germany reportedly being planned in Paris, the news of which also greatly disturbed the Belgian Repko representative, Léon Delacroix. Fischer therefore urged his government to draft a new plan at once.[16]

But the Cuno government was chary of presenting new proposals in part because it had received information, albeit based on unreliable Italian sources, that France had granted the British concessions at Lausanne in the Eastern Question in exchange for a free hand *vis-à-vis* Germany. It was further understood that Mussolini would not oppose France's policy, because certain concessions had been made to Italy as well. A new reparations plan in these circumstances was perhaps useless.[17]

The information that France was adopting a stiffer line, as reported by Fischer, was correct. Poincaré's thinking was clearly revealed on November 27, 1922, when the French government officially declared that it had, after deliberations in the Elysée Palace, agreed to take certain measures for securing French indemnity claims. These included: (1) A complete attachment of the French-occupied Rhineland, accomplished by the replacement of German officials by French; and (2) The occupation of two-thirds of the Ruhr Territory, including Essen and Bochum, so that reparations coal and coke would be assured France.[18]

The Elysée session was in fact the culmination of a trend evident for some time. On October 12, 1922, the French Chambers, in an extraordinary session, thoroughly aired France's prospects and policy. Though no decision was made, on November 17 Poincaré stated in the Chamber of Deputies that the German government was obviously following a policy of deceptive bankruptcy and that the full employment of German industry and its increasingly high performance stood in glaring contrast to the Reich's alleged payments incapability. He also announced that his government was determined to grant Germany a reparations moratorium only on the condition of France's seizing productive pledges. He was upheld by a vote of 418 to 70, only the Socialists and Communists opposing him, while the Radical Socialists abstained.[19]

The French position was also based on the conclusions of the Dariac Report. This significant document, often neglected by students of this period, was the handiwork of Louis Adrien Dariac, chairman of the finance commission of the French Chamber of Deputies. He was instructed in May of 1922 by the government to enquire into the political and economic situation in the Ruhr, the Rhineland, and in the Saar with an eye to French interests. Dariac submitted a secret report of his findings on May 28, 1922. This document, soon made public by persons unknown, was later considered a major cause of the Ruhr occupation by certain Germans in view of Dariac's assertion that the great wealth of the Ruhr industrialists, which was not affected by the drop in the German mark, already apparent by 1922, would still be in existence even if Germany were to declare bankruptcy. This wealth could and should be used to meet Germany's reparations payments, he concluded.[20]

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[15] *Ibid.*

[16] Telegram, Fischer to the *Reichsfinanzministerium* and Cuno, Paris, November 29, 1922, in *ibid.*, pp. 19–21. The Germans were already aware of Bradbury's plans. On November 21, Bergmann reported some of the details to Berlin. See *ibid.*, note 4, p. 20.

The British were also casting about for other means of effecting a reconciliation between France and Germany. On November 24, 1922, Sir Thomas Barclay, a prominent British official, conferred in Berlin with von Rosenberg, urging that talks between the latter and Poincaré might be arranged perhaps at Wiesbaden, in a neutral country, or in Paris. Later, talks could be arranged with Bonar Law and Mussolini. Rosenberg, having concluded that Poincaré would not accept, expressed himself prepared to undertake these for appearances sake, but insisted that it be clear that the British, and not Berlin, were initiating them. Memoranda dated November 25, signed by von Rosenberg, and November 27, signed by *Staatssekretär* Edgar Karl Alfons Haniel von Haimhausen, of the Foreign Ministry, Berlin, in Germany. *Auswärtiges Amt.* Microfilmed records of the Weimar Republic entitled, *"Frankreich,"* National Archives, Washington, D. C., serial 2406H, frames D501042–44, National Archives Microcopy T120, roll 1328.

[17] Telegram, Konstantin von Neurath, German ambassador at the Quirinal, Rome, November 30, 1922, GFM [German Foreign Ministry]: 2406H/D501055, T120/1328.

[18] Harbeck, *Das Kabinett Cuno,* note 5, p. 20. The meeting, chaired by the French president, Alexandre Millerand, also included Marshal Ferdinand Foch; the chief of the General Staff, Gen. Buat; the chairman of the Repko, Louis Bartou; the French Rhineland high commissioner, Paul Tirard; the French minister of war, André Maginot; the French general inspector of mines, Coste; and others.

[19] France. *Journal officiel. Débats parlementaires. Chambre des Députés,* 1922, no. 90, 12th Legislative Session, October 13, 1922, 2583–2629; *ibid.*, no. 111, November 18, 1922, 3225–3264. See discussions in Frederick L. Schuman, *War and Diplomacy in the Third French Republic* (New York, 1931), p. 258; and in Zimmermann, *Deutsche Aussenpolitik,* pp. 135–136.

Meanwhile, news of the Elysée conference caused grave concern in Washington, and Charles Evans Hughes, the United States secretary of state, on November 29 instructed Myron T. Herrick in Paris, the American ambassador there, to ascertain the details of France's plans to occupy the Ruhr, which he expeditiously reported to Washington. Herrick had been informed that, if the Brussels Conference failed, France and Belgium were determined to act against Germany, though Paris denied that the Ruhr was to be occupied. But France hoped that the United States would not be disturbed by the talk of action, and no doubt partially in response to Hughes's concern, the French insisted that erroneous information had reached abroad regarding the Elysée meeting, and that it did not mark a stiffening of the French attitude.[21]

However, the German ambassador in Paris, Wilhelm Mayer-Kaufbeuren, took the Elysée meeting seriously and concluded that, though it might be regarded as a tactical move and a means of expressing French disapproval of Cuno's adherence to the Note of November 14, the rigid French posture would be difficult to retreat from. Therefore, in the face of a weakened British stance, and an even less reliable Italy, Germany must take into account the tougher French line.[22]

Berlin, however, temporarily exhibited a measure of obstinancy of its own. On December 1, 1922, the Reich finance minister telegraphed the German *Kriegslastenkommission* in Paris:

> The Reich government does not for the present intend to set forth any new proposals in response to developments. Our position, that we have delivered a note containing concrete proposals, and that we first expect an answer to this, is in no way obviated by the threats of France. Certainly, we are prepared to take part in any discussion regarding this and counter proposals. We are at present considering here whether and how our proposal is to be changed or new proposals made in the light of new circumstances.[23]

By the time of the next cabinet meeting on December 6, the Germans had indeed decided upon new proposals and the prospects for their presentation at the London Conference, soon to be convened, were debated. The chancellor agreed with the view that the Elysée meeting must be taken seriously, no doubt impressed by Mayer's reports from Paris that the French would certainly implement the policy of productive pledges unless satisfactory proposals were forthcoming. Von Rosenberg therefore suggested that a proposal might be made which would not greatly enlarge Germany's burden but which would make a better impression abroad. It might be possible to float a loan of four billion marks, of which one-half might be taken up abroad and the remaining domestically. This sizable sum would eliminate the need for Reichsbank funds. The proceeds from the foreign portion of the loan, and half of the loans raised internally, would be given to the Entente to apply to the reparations account. Stimulation for taking up the shares internally would be provided by tax exemptions. In return for guaranteeing this substantial loan, which was to prove that Germany was earnestly seeking a reparations solution, the moratorium might be extended, according to the amounts raised; there would be an easing of the Rhineland occupation; and preferential trade treatment would be extended to Germany. This offer departed from the November 14 Note by the larger loan figure, the provision for tax exemptions, and the concessions to be made to Germany in return. Rosenberg suggested that the main features of this plan be transmitted to Paris immediately. The favorable reception of this scheme was naturally questionable, he concluded, but it would in any case correct the impression that the Germans were not willing to cooperate. This would embarrass the French. The chancellor concurred and stated that France would have to consider whether it desired above all a practical solution to the reparations matter or whether its goal was the destruction of Germany. This proposal bears the earmarks of being somewhat "off-the-cuff," and cynically conceived, an example of the opportunism which gives credence to French assertions made so often that Germany was not sincere in its reparations offers.[24]

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[20] Louis Adrien Dariac, *The Dariac Report. Ruhr, Rhineland and Saar* (Manchester, 1923), a pamphlet reproduced from articles published in the *Manchester Guardian* on November 2, 1922, and March 5, 1923. See also a German version in Bernard Rausch, ed., *Geheimdokumente über die französiche Ruhrpolitik* (Berlin, 1923).

The German minister to Belgium, Otto Landsberg, implied to the Belgian foreign minister, Henri Jaspar, on January 10, 1923, on the eve of the Ruhr occupation, that many Germans considered the report to be of prime significance and a matter of grave concern. See his telegram to Berlin on that date from Brussels in Germany. *Auswärtiges Amt.* Microfilmed records of the Weimar Republic entitled *"Besetzung des Ruhrgebiets,"* National Archives, Washington, D. C., serial 9482H, frames H276603–04, National Archives Microcopy T120, roll 3573.

[21] United States. Department of State. *Foreign Relations of the United States,* 1922, 2: pp. 185–186. See also telegram, Mayer to Berlin, Paris, November 29, 1922, GFM: 2406H/D501053–54, T120/1328.

[22] Telegrams, Mayer to Berlin, Paris, November 27, 1922, GFM: 2406H/D501041, T120/1328; and *ibid.,* November 28, frame D501045.

[23] Harbeck, *Das Kabinett Cuno,* note 6, p. 21. On that day, in fact, several prominent German financial and industrial experts conferred with Cuno in the Chancellory regarding proposals to be made at the London Conference. See discussion and a list of those in attendance in Zimmermann, *Deutsche Aussenpolitik,* note 8, pp. 137–138.

But the plan, though hastily formulated, was considered worthy of consideration by Léon Delacroix, the Belgian Repko representative. He urged that the plan be formally presented in an appropriate note to the Repko by Friday, December 8, ensuring its presentation at the imminent London Conference. The Belgian official thereupon recommended a proper form for the note, revealing the feeling in certain Belgian circles that a solution must be found to the reparations question to forestall French plans to occupy the Ruhr which would clearly involve Belgium. His suggestions included:

1. The German government was to set forth a plan for the stabilization of the German currency, utilizing funds from the Reichsbank, thereby establishing the conditions for an international loan. Stabilization would also be contingent upon Germany's subsequent reparations pledges being regulated in a tolerable manner.[25]

2. Germany was to reiterate the necessity of relief from the next few years' pledges with the understanding that these would be financed by a loan raised in foreign countries and within Germany; the internally raised loan was to be encouraged by tax exemptions. The proceeds of the external loan would be placed fully at the disposal of the reparations account, together with one-half of the internally raised funds. The other half of the proceeds of the internal loan must be earmarked up to a determined amount for deliveries in kind and for some of Germany's domestic needs; beyond these the remaining portion would devolve to the reparations account.

3. The German government was also to insist that a final solution of the reparations question was most urgent, but believed that the stabilization plan and the regulation of the next years' annuities were necessary to create the prerequisites. A political peace was also required for a final solution of the reparations question. The German government was prepared to enter immediately into negotiations with the allies for the practical implementation of these measures.[26]

So as to be available to present the German proposals, and also in response to a telegram from the German ambassador in London, Friedrich Sthamer, Bergmann, Mayer, and Carl Joseph Melchior, the latter a German banking expert, made their way to London. Sthamer's telegram to Berlin on December 7, 1922, had stated in part: "The English government has not, so far as I know, declared any desire to have any German experts here during the impending Prime Minister's Conference, but I would recommend that these might be sent, so that the mentioned guarantees might be effectively discussed." [27] Also on Decem-

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[24] Minutes of the cabinet session of December 6, 1922, in Harbeck, *Das Kabinett Cuno*, pp. 34–38.

[25] The Germans later rejected the use of Reichsbank funds for the purposes of stabilizing the currency. In a letter of November 23, 1922, the Reichsbank president, Rudolf Havenstein, informed the chancellor that there were "grave doubts" as to the efficacy of this action for stabilizing the currency, as the international experts had previously explained in a special report on November 8, 1922. Accordingly, the Reichsbank was not mentioned in the German Note of December 9, 1922. Rosenberg's proposals had taken this into account, but Delacroix, not having been informed of the letter, included this item in his recommendations. See discussion in Harbeck, *Das Kabinett Cuno*, note 4, p. 48.

[26] Telegram, Bergmann to the Reich chancellor and the Reich finance minister, Paris, December 7, 1922, in *ibid.*, pp. 48–49.

[27] *Ibid.*, note 1, p. 48. David Fischer, on December 4, had reported from Paris: "Doubtful that Bergmann and Melchior here at the Repko on Saturday can have any practical influence on the course of the London Conference

ber 7, Cuno drafted instructions for Bergmann who was to inform the British government that discussions were underway in Berlin with representatives of all segments of Germany's financial and industrial circles regarding the drafting of a final solution to the reparations question. Therefore the matter of the proposed loans was a temporary expedient, "made necessary by the shortness of time." [28]

But these arrangements were not altogether satisfactory to Sthamer, who, on December 8, again wired the chancellor:

> I consider it to be absolutely essential, that a personal letter be written by you to Bonar Law and delivered to him. Otherwise Bonar Law must personally plead for the German proposals in the Conference. . . . According to reports in today's *Times* and *Daily Mail,* this will give the impression that his remarks are based on a secret understanding between London and Berlin. This will immediately result in France's distrust. The situation is this: The English government has not set forth any plan; France has, as I hear from D'Abernon [the British Ambassador at Berlin], . . . come without one. The German plan would therefore provide a way out of an almost inextricable situation, and its presentation by means of a personal letter from the Chancellor would be a dexterous and significant stroke. I would consider it soon enough if the letter were sent by tomorrow afternoon by aircraft.[29]

Berlin took Sthamer's advice and, on December 10, the ambassador delivered to the British government the German Note of December 9, with an accompanying letter from Cuno. The Note of December 9 was based on Delacroix's and Rosenberg's suggestions, though without the former's recommendations regarding the use of Reichsbank's funds, and the latter's demands for a *quid pro quo* for Germany, and also on the Note of November 14. Cuno also included the total loan sum of six billion marks, with an interest rate of four percent.[30]

Bergmann had no opportunity to elaborate upon the new Note, but Bonar Law, on behalf of Germany, read its offer at the Prime Minister's Conference, resulting in a short discussion. However, the German proposals were rejected.[31]

Mussolini also presented a plan but this too was rejected. Poincaré—who, despite Sthamer's report, did possess a plan—countered with his proposals to occupy the Ruhr and consolidate control over the Rhineland, compelling Germany to make "serious propositions," and to ensure their execution, declaring, finally, that the French parliament would not accept any plan involving a reduction of the German debt. Since Mussolini and Bonar Law rejected these, the London Conference adjourned on December 11, after a three-day session, with the decision to reassemble in Paris on January 2, 1923. There was to be no Brussels Conference. Bergmann attributed the failure of the London Conference to England and explained that her action was "a concession to the French . . . with a view of preventing a breach of the Entente Cordiale." [32]

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and consider in any case Bergmann's timely presence in London to be of far greater value." *Ibid.*

[28] *Ibid.*, pp. 49–51. See also notes 1, 5, 7, pp. 49–50; and note 8, p. 51.

[29] *Ibid.*, note 5, p. 50.

[30] Cuno's letter and Note of December 9 are in Michaelis and Schraepler, *Ursachen und Folgen* **4**: pp. 433–435. See also discussion in Bergmann, *The History of Reparations*, pp. 158–159.

[31] Harbeck, *Das Kabinett Cuno,* note 5, p. 50. By December 10, Bergmann seems to have had few illusions that the German plan would be accepted. He had been informed that a foreign loan at four per cent was not deemed possible and the German plan did not indicate the extent to which German industry would be involved in the payments, important since this was the expressed aim of the intended Ruhr occupation. See Bergmann's telegram to Cuno, London, December 10, 1922 in *ibid.*, note 8, p. 51. Cuno promptly wired back that four per cent was adequate for the internal loan, and that Bergmann should make it clear, if he got the opportunity, that German financial circles were fully behind the German offer, though Bergmann was apprised of certain difficulties raised by the industrialists, who regarded a temporary solution to the reparations question with suspicion, and who expressed interest only in a final solution, for which sacrifices would be made. Cuno admitted that there had not been adequate time to interest the industralists in the Note sent hastily to London, though they had been consulted. Telegram to Bergmann, Berlin, December 10, 1922, in *ibid.*

[32] Telegram, Bergmann to Cuno, London, December 11, 1922, in *ibid.*, note 1, p. 60. See discussion of the London Conference in Schuman, *War and Diplomacy in the Third French Republic*, p. 284. See also Italy. *Documenti diplomatici. Verbali e documenti della Conferenze interalleate di Londra e di Parigi sulle questioni delle riparazioni tedesche e dei debite interalleati* (*Londra, 9–11 decembre 1922 e Parigi, 2–4 gennaio 1923*) (Rome, 1923).

Bergmann reported to Cuno from London that the Bonar Law government was convinced that it could not work in harmony with Poincaré, but that it would under all circumstances avoid a break with France, though this was regarded in some British circles as inevitable, at least until the Turkish-Greek matter was settled at the Lausanne Conference. Bergmann, plainly discouraged by the failure of the German plan at London, was all the more disappointed because he had been impressed earlier by the apparent Belgian support, as revealed by Delacroix's interest, as well as the favorable reporting of Germany's position in the British press. See report from Bergmann to Cuno, London, December 11, 1922, But Bonar Law went before the House of Commons on December 14 and suggested that Cuno's proposals represented a meaningful, forward step in the reparations problem.[33] On the following day, Poincaré justified his attitude at London before the Chamber of Deputies. He indicated that he regretted the necessity of now acting against Germany but that he would do so if forced to. He received a vote of confidence of 486 to 66 votes, vindicating his ever-increasingly more inflexible policy summed up in the slogan: "No moratorium without pledges." [34]

Faced with the failure of the German proposals at London, Cuno now proceeded to devise concrete plans for the Paris Conference. Furthermore, he had to contend with certain factions among the industrialists who publicly announced their dissatisfaction with the hastily drafted proposals sent to London.[35] These individuals would have to be fully consulted and mollified before new plans were drafted. In the meantime, Bergmann suggested that Bradbury's plan had now perhaps emerged as a viable solution to the reparations question. Accordingly, the British proposals were carefully scrutinized at Berlin. Bergmann's lengthy report regarding them also contains interesting observations concerning Bradbury.

The Bradbury plan was contingent upon the following: Germany's credit being returned to normal; all burdens under the Peace Treaty would be included in the annuities; that during the time of a projected moratorium, to allow stabilization of the German currency, no pressure of sanctions was to be exerted upon Germany; deliveries in kind being fixed at an agreed upon figure; and all deliveries in kind made in the previous four years were to be regarded as capital payments. The technical details were to be worked out later. So that the French might find the plan acceptable. England was prepared to renounce almost all of its total Inter-Allied war and postwar debts. If the United States agreed to do likewise, though there was no reason to believe that it would, then even better terms could be arranged. Bradbury also proffered interesting tactical advice which would facilitate the plan's acceptance. He proposed that Germany advance the plan as its own. England would then declare that it approved of the proposals. But Bergmann argued that the recent London Conference had made it clear that "any German plan, good or bad, would be automatically rejected by France, simply because it had emanated from Germany." Furthermore, there was the danger that the totals of a German offer, even if the plan were found basically workable, would be increased by the French "because they would never believe that Germany was offering something that was in accord with the maximum of her delivery capabilities." Bergmann asked his government that, if the plan appeared at all acceptable, then it should, in deference to political considerations, be given precedence over any German proposal because, as he ruefully concluded: "I am sure that Sir John, as a result of his egotism, would oppose any separate German plan most forcibly, because he would consider his own at all events to be much better than any others." [36]

Beyond considering Bradbury's plan, Cuno's government was also prompted to take additional steps to improve Germany's position by January 2, 1923. First, the Foreign Ministry appealed to the European nations that had been neutral in the Great War to intercede with the American and British governments encouraging them to take action to prevent a further deterioration of the reparations question. The Swedish prime minister Hjalmar Branting immediately sounded out Washington, and received a sympathetic response, but a less favorable reaction was noted in Britain. The Swiss vacillated, though expressing interest

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in Harbeck, *Das Kabinett Cuno*, pp. 60–63. Bergmann's assessment of the British position was supported in part by Rudolf Breitscheid, a prominent SPD member of the Reichstag, who had stated, following a trip to London shortly before, that Bonar Law's government, preoccupied with the Eastern Question and the Lausanne Conference, had "handed itself over completely to France and was therefore entirely in its tow," at least regarding reparations. *Ibid.*, note 2, p. 60.

[33] See lengthy discussion in Great Britain. *Parliamentary Debates. House of Commons*, 5th Ser., Vol. 159, 3222–3350. See also Stockhausen, *Sechs Jahre Reichskanzlei*, p. 55.

[34] *Journal officiel. Débats parlementaires. Chambre des Députés*, 1922, no. 134, December 16, 1922, 4185–4248. Also see discussion in Friedrich Stampfer, *Die Vierzehn Jahre Der Ersten Deutschen Republik* (3rd ed., Hamburg, 1953), p. 314.

Somewhat later, on December 21, the Senate supported Poincaré unanimously. See discussion in Schuman, *War and Diplomacy in the Third French Republic*, p. 285.

[35] See discussion in Harbeck, *Das Kabinett Cuno*, note 6, p. 65.

[36] Report on Bradbury's plan sent by Bergmann from London to Cuno on December 11, is in Harbeck, *Das Kabinett Cuno*, pp. 60–64; note 3, p. 61. Bradbury's plan became the basis of that presented by the British at Paris on January 2–4, 1923, though the cabinet had modified some of Bradbury's proposals in lengthy debate.

in a reasonable solution to the problem. The other neutrals apparently did not respond.[37]

This action, however, was subsidiary and merely in support of Cuno's main effort, focused upon Washington. A preliminary meeting was held on December 12, 1922, when the German ambassador in Washington, Otto Wiedfeldt, conferred with the United States secretary of state. The former stated that the Germans were now well aware that Poincaré was determined to occupy the Ruhr. Wiedfeldt felt, however, that this was France's last card, and insisted that he almost hoped that the French would move into the Ruhr, thereby bringing matters to a head. It would soon be clear that the French could not exploit the Ruhr profitably—a fact which they must be aware of. The Germans were therefore forced to the conclusion that "in occupying the Ruhr the object was not to get reparations but to dominate German industry and prostrate Germany." [38]

On the following day, Cuno instructed Wiedfeldt to contact the prominent American banker, J. Pierpont Morgan, seeking his aid in underwriting the efforts of a proposed European Bank Syndicate which would guarantee a four-year loan to Germany calculated to stabilize the mark. This would lead not only to the rehabilitation of Germany's economy but to that of the entire world.[39] This proposal to Morgan was to be coupled with a projected peace pact, which was cabled to Wiedfeldt on December 13 and transmitted to Hughes two days later by the ambassador, involving countries with special interest in the Rhine, and guaranteed by the United States. The American government was earnestly urged that: "If the government and people of the United States should come forward to the rescue of Europe with the proposals that if those powers with interests in the Rhine, i.e., France, England, Italy, and Germany, would pledge solemnly to the U.S.A. to make no war against each other for a generation without an especial empowering by the majority of the population," Germany would be most willing to accept.[40] Thus Germany proposed a "peace of God on the Rhine," which the United States was to initiate formally and act as its trustee.[41] Wiedfeldt reported to Berlin: "Hughes was greatly interested in the proposal . . . terming it a workable step forward, . . . [and] . . . will cautiously sound out the other states." [42]

Crucial to the plan's implementation would, of course, be the receptivity of France. Hughes had already apprised himself of France's general attitude following the failure of the London Conference. On December 14, he met with the French ambassador to the United States, Jules Jusserand. Queried as to France's intentions regarding the Ruhr, Jusserand admitted that the French were weary of German attempts to avoid remitting full reparations payments by one scheme or the other. Germany had resources in large quantities in foreign countries. These might be forced out if the French threatened to occupy the Ruhr. Hughes noted that threats were one thing; an actual occupation was another. There was folly in attempting to extract reparations from Germany by occupying the Ruhr. The reparations problem should be considered on its economic merits; Germany clearly could not pay beyond her means. Hughes suggested that a commission or committee of a purely financial and economic nature be established to devise a workable reparations plan with political considerations being laid aside. "They must give an opportunity for such a body to work not as official delegates but as the representatives of their own conscience, knowledge and experience in order to give an authoritative economic answer." [43] Thus in America, as previously in Germany, the Dawes Plan in embryo was advanced, but it would only materialize beyond the abyss of the Ruhr occupation.[44]

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[37] Zimmermann, *Deutsche Aussenpolitik*, p. 138.

[38] *Foreign Relations of the United States*, 1922, **2**: pp. 186–187.

[39] Zimmermann, *Deutsche Aussenpolitik*, pp. 138–139. Wiedfeldt was unsuccessful in this venture.

[40] Harbeck, *Das Kabinett Cuno*, note 9, pp. 109–110. See series of documents pertaining to this subject in *Foreign Relations of the United States*, 1922, **2**: pp. 203–211. Wiedfeldt also observed that while there was no danger of Germany's making war on France, it was desirable that the French fear should be removed if possible. He indicated that the term "generation," as used in the proposal, was to mean perhaps thirty years.

[41] The authors of the peace pact seem to have been the Austrian minister to Berlin, Richard Riedl, and the director of the Deutsche Bank, Oscar Wassermann. The pact was based on the consideration that any plan for the solution of the reparations question would be fruitless unless some means could be found to remove France's fear for her security. Since the League was not accepted in France for this end, some alternate scheme must be found, such as that suggested. See Zimmermann, *Deutsche Aussenpolitik*, note 13, p. 140.

[42] Harbeck, *Das Kabinett Cuno*, note 9, pp. 109–110.

[43] *Foreign Relations of the United States*, 1922, **2**: pp. 187–192.

[44] See discussion in Allen, *The Rhineland Occupation*, p. 264. Nicolson, in his *Curzon*, p. 220, credits Lloyd George and Curzon with formulating the Dawes Plan.

Though Jusserand agreed with Hughes's argument, he noted that France's position was made constantly more difficult by the tendency in the United States and Britain to favor and excuse Germany and to blame France for Europe's ills. He also concluded that the overall situation and conditions in France and Germany in the last analysis precluded any amicable solution to the myriad problems.[45]

Later, on December 18, following receipt of the German peace offer, Hughes informed Jusserand of its essential features. The latter agreed that it merited serious attention, though he rather petulantly argued that nothing permanent could be hoped for "until a different sort of instruction was given in the German schools; . . . instruction [which now] inculcated the desire for revenge upon France." [46] Since France was to be the acid test for the German peace offer, Hughes decided not to sound out any of the other interested powers until the French had reacted.

Poincaré, following consideration of the German offer, instructed Jusserand to inform Hughes that the results of the Paris Conference should be awaited before other avenues were explored. Regarding the offer itself, the French Premier concluded that it was but an attempt by Germany to fend off the threatened sanction measures. The proposal would be acceptable to France only if it were guaranteed by Britain and the United States. The provisions for a "people's vote" and the limits of the pact to only a generation were unacceptable. Poincaré argued that the Germans could not be relied upon in any case to keep their agreement once it was signed, and "that if they wanted to make war they could easily get a vote to that effect; that it would be necessary for them to change their entire attitude towards the French; that they were now resentful and hated the French and were looking for revenge." Poincaré also noted that France could not enter into such an agreement without an amendment of her constitution, since this document stipulated that only Parliament had the right of making war.[47] There is no clearer evidence that France's course had been set. Certainly more than a simple amendment to the constitution was involved.

Jusserand did express interest in the possible involvement of the United States and noted its desirability. But Hughes, reflecting America's reticence in involving itself any further in European affairs, would not promise that the United States would bind itself to the agreement. He concluded, following France's rejection of the plan, that the German proposal would be most useful by way of "autosuggestion," leading nations to think in terms of peace rather than of war. Such a solemn vow not to engage in war "would be an important step toward the maintenance of peace." [48] The Kellogg-Briand Pact thus cast its shadow long in advance. Perhaps the only nation capable, in the circumstances, of effecting a change in the collision course of France and Germany opted out and subsequently played only a peripheral role until after the Ruhr occupation.

In the meantime, Bergmann returned to Berlin from London. On December 16, he made reports to the party leaders and the cabinet. Having recovered a measure of optimism, he concluded that, while Germany's plan had not been accepted in London, there was no reason to believe that a modified plan would not be considered at Paris and that Germany should develop one as an alternate to the proposals that Bradbury was devising.[49]

On the same day the cabinet discussed reparations with German reparations experts, and began planning a new course of action. The following conclusions were reached: the German Note of November 14 was to mark the German point of departure; Germany must present a final solution to the reparations question at Paris, though no total sum would be set, leaving room for negotiations; the speedy evacuation of the Rhineland was the prerequisite for a final solution, though this might be accomplished in stages, and the illegal occupation of Düsseldorf and Duisburg—occupied since 1921—must be immediately raised; Germany must be freed from all reparations deliveries for a period of three or four years; and finally, regarding the vital concern of France for her security on the Rhine and guarantees for carrying out the reparations agreement, Germany was to ensure these and facilitate an understanding between French and German industrialists for cooperation in their respective industrial areas. It was agreed that a new German plan was to be worked out on the basis of these conclusions and debated by the government in time for its submission at Paris in January.[50]

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[45] *Foreign Relations of the United States*, 1922, **2**: pp. 187–192.

[46] *Ibid.*, pp. 204–205.

[47] *Ibid.*, pp. 206–207. See also Harbeck, *Das Kabinett Cuno*, note 10, p. 110.

[48] *Foreign Relations of the United States*, 1922, **2**: pp. 206–207. A second meeting between Hughes and Jusserand occurred on December 26. The latter stated that Poincaré had informed him that in France "there was a growing feeling of impatience and a growing sense of irritation." He suggested that some substantial action by France could therefore be expected if the Paris Conference collapsed. He denied that Poincaré desired any annexations or diminution of Germany, however. What France wanted was to be paid, which clearly could not be accomplished unless Germany was prosperous. Therefore, it was not in France's best interest that Germany be crushed. And even though French public opinion demanded that something should be done, "nothing was contemplated except to take certain guarantees," such perhaps as the taking of customs receipts. The French thus persisted in their attempts to assuage American fears regarding their intentions. But Hughes remained unconvinced that the action contemplated would be beneficial and thought that it indeed might even escalate into a more dangerous situation. See in *ibid.*, pp. 197–198.

[49] Minutes of cabinet session, December 16, 1922, in Harbeck, *Das Kabinett Cuno*, pp. 70–72. A list of the party leaders conferring with Bergmann is in *ibid.*, note 5, p. 92.

On December 22, Cuno presided over a cabinet session in which he reported that a second conference held with Germany's reparations experts on the day before had resulted in a majority vote on additions to the proposed new plan, some of which were far-reaching and bold. These included the following: in order to halt the deteriorating economic situation, Germany must be restored to full economic and financial freedom, and must reject those limitations of the Treaty of Versailles pertaining to these; a fixed reparations sum of only fifteen billion marks could be paid, limited to the maximum interest rate of five per cent and an amortization rate of one per cent, with the stipulation that the total amount of 900 million gold marks annually should not be exceeded; if accepted Germany must exert every effort to raise the sum as quickly as possible, but this amount could only be raised by an international loan, secured by a first mortgage on the German railroads.[51]

Cuno also met, on December 20, with the Presidium of the *Reichsverbandes der Industrie*, and on December 22, with party leaders, seeking diligently to ensure a consensus in preparing the new proposals.[52]

During this period Cuno also kept abreast of Poincaré's attitude and actions. Though the chancellor had hopes that France was prepared to consider carefully new reparations proposals, Poincaré in his speech before the French Senate on December 21 revealed an intransigent attitude.

> Germany continues to make its mistakes. Its magnates of heavy industry have continued to enrich themselves at the expense of the German people. The inflation is to a considerable extent increased and the economic and financial mismanagement could involve Germany in a deplorable catastrophe. Germany has . . . systematically ruined itself, to evade reparations payment. . . . Germany does not fulfill its pledges, and the payments plan of May, 1921, has become a dead letter. . . . The past must make us mistrustful. One must subject Germany to effective control. . . . Germany has state goods, to which, according to Article 248 of the peace treaty, the Allies have prior claims. These claims are to be for [France] a concrete reality. . . . The Allies must take these together with France, or France will proceed to take them for the joint account.[53]

This speech resulted in an unanimous vote of confidence for the French Premier.

Though Cuno had planned to speak on December 23, in rebuttal, events dictated a postponement. In the meantime, to counter Poincaré's remarks, Berlin immediately released through the Wolff Telegraphic Bureau (WTB) the statement that "no one of the Allied powers can raise reparations claims alone against Germany; this has to be done rather through the Reparation Commission. By the same token . . . no single power can use force for the collection of reparations claims." [54]

Almost as if in response to this release, the Reparation Commission did act on December 26. Considering a French motion made earlier on October 20, it declared unanimously that Germany had failed to make full timber deliveries to France during 1922. A further motion, which stated that Germany's action constituted a voluntary default, was passed over the British member's negative vote. Two days later, Jean Louis Barthou, the French member of the Repko, and its president, proposed that the same action be taken regarding coal deliveries, though no decision was reached at that time.[55]

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[50] *Ibid.*, pp. 73–74.

[51] *Ibid.*, note 4, pp. 91–92. It is indicative of Cuno's desire to develop a reparations plan that the industrialists would accept that the conclusions arrived at by the experts on December 21, closely followed a plan proposed by the influential industrialist, Hugo Stinnes, in October, 1922. See copy of his plan in Michaelis and Schraepler, *Ursachen und Folgen* **4**: pp. 414–416.

[52] Harbeck, *Das Kabinett Cuno*, note 4, pp. 91–92; notes 5 and 7, p. 92.

[53] Translated from the German version of Poincaré's speech in *ibid.*, note 8, pp. 92–93.

[54] *Ibid.*

[55] For a full account of the Commission's action, see report from Roland Boyden, the American unofficial delegate to the Repko, to the American ambassador in Paris, Myron T. Herrick, in *Foreign Relations of the*

Cuno continued to seek consensus in the preparation of the new German proposals. Yet he only belatedly, on December 28, met with representatives of the various trades unions, and then only at their insistence. Chided for not consulting labor earlier, Cuno argued somewhat lamely and illogically that his government stood above the parties and was in any case a government which supported the workers. He insisted that no final program for dealing with the reparations problem had been devised and concluded: "The picture changes from hour to hour. One must expect two major eventualities: . . . either a solution will be worked out at Paris, which the the German Reich could not accept with respect to the Rhineland, or it would open the way to negotiations with the other side." The latter was, of course, the hope of the government, he continued. In either case, it is certainly necessary that all of the power of the German people be used together on behalf of the Fatherland. All must sacrifice as they can. Denying that he had undertaken negotiations with other major groups, an obvious misrepresentation of the facts, Cuno indicated that he did not desire to speak of these developments as they were not complete.

Unimpressed by such platitudes and explanations, and irritated by Cuno's condescension, Friedrich Baltrusch of the *Deutscher Gewerkschaftsbund* (DGB), declared that this procedure was a mistake. The desire of the trades unions was to receive correct information so as to keep the masses quiet, surely an end desired by the government. Theodor Leipert, of the *Allgemeiner Deutscher Gewerkschaftsbund* (ADGB), insisted that the government should consult the membership of the trades unions, since they were also experts on economic matters. The chancellor responded that the *Reichswirtschaft* minister, Johannes Becker, would immediately consult with experts from the trade union circles, if he had not done so already. But Siegfried Aufhäuser, of the *Allgemeiner Freier Angestelltenbund* (AFA), noted that it was perhaps already too late for the unions to be consulted and respond with suggestions in time for their consideration. When asked whether or not industry was prepared to guarantee reparations payments, Cuno abruptly terminated the discussion. It is clear that the chancellor distrusted the unions and hoped to manage affairs with little or no consultation with them.[56]

As the old year ended, Germany's hopes for American intervention in European problems were dashed by a speech made by the American secretary of state on December 29, 1922, in New Haven, Conn. Delivering his remarks to the American Historical Association's annual meeting, Hughes proposed that before other measures were resorted to, a commission of experts be summoned to set forth the amount and manner of reparations payments on an economic rather than on a political basis, and with a consideration of Germany's delivery capabilities. He promised that qualified Americans would participate in this endeavor. Yet he insisted that the problem could not be solved by Americans: "We cannot consent for them. The key to the settlement is in their hands, not in ours." He also made it clear that the United States did not desire to see Germany relieved of her responsibility for the war nor of her obligations. Neither did the United States desire that France lose any part of her just claims. But, he continued: "On the other hand, we do not wish to see a prostrate Germany. There can be no economic recuperation in Europe unless Germany recuperates. . . . We should view with disfavor measures which instead of producing reparations would threaten disaster." But despite demands from various quarters, the United States could not itself assume the role of arbiter, he concluded.[57]

In order to publicize the prospects of Germany's reparations proposals, to counter Poincaré's recent Senate speech, and to acknowledge Hughes's remarks, Cuno spoke before the Hamburg Bourse on December 31, 1922. He revealed that a French-German peace agreement proposed by Germany to France through a neutral power had been rejected by Paris, much to his regret.[58] He

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United States, 1922, 2: pp. 198–199. The Germans admitted their default but insisted that it was unintentional. See Bergmann, *The History of Reparations,* p. 161.

[56] An account of this meeting is in Harbeck, *Das Kabinett Cuno,* pp. 95–100. See also note 2, p. 95; and note 7, p. 97.

[57] Hughes's speech appeared in the German papers on the evening of December 30, with much comment. See lengthy abstract of his text in *Foreign Relations of the United States,* 1922, 2: pp. 199–203. This was wired to Herrick in Paris on December 29, with instructions to circulate it to London, Brussels, Rome, Lausanne, and Berlin.

[58] Cuno did not reveal that the United States was the intermediary power. The press speculated that perhaps Switzerland or Holland had acted in this capacity. When news leaked out that America had been involved, Hughes, deciding to help clear the air on the eve of the Paris Conference—or perhaps to embarrass France—released a formal announcement to the press on January 1, 1923.

noted his agreement with certain of Hughes's remarks, some of which were in accord with statements that he himself had made previously, and was gratified by their favorable reception in Germany. However, he must have been less than pleased with Hughes's conclusion that America was not inclined to intervene immediately. Responding to Poincaré's charges, the chancellor denied that Germany had systematically ruined herself to avoid making reparations payments. Her economic difficulties were rather the result of the war and her loss of valuable lands and population, and the Treaty of Versailles prevented Germany from competing on equal terms with other nations. Yet the Reich was working diligently to find some solution to the reparations problem, Cuno affirmed, and presented an outline, specifying that Germany was prepared to name a final total sum which could be reasonably met and raised by domestic and foreign loans. If these funds and a moratorium were forthcoming, Germany was prepared to guarantee the meeting of her obligations.[59]

Seeking to make immediate official use of this speech, the German Foreign Ministry telegraphed to Mayer in Paris:

> Officially inform them there that the government, in confidential agreement with authoritative representatives of Germany's economic life, has examined . . . existing possibilities for a final solution of the reparations question and has worked out a plan, which for its being carried out, has secured the support . . . especially of the banking and industrial circles.

Mayer was also instructed to request that a representative of the German government be accorded the opportunity to present the German plan at the Paris Conference and to elaborate orally upon it.[60]

As the new year dawned, much attention was focused on Paris in anticipation of the arrival of the Allied premiers. In the meantime, shadows were cast over their approaching meeting. The Germans were angered by an event that occurred in Paris at the New Years' Day reception staged for the diplomatic corps by the French president, Alexandre Millerand, who had addressed the assembled statesmen. He replied to a note sent to him earlier by the dean of the diplomatic corps, the papal nuncio, Monsignor Ceretti, on behalf of his colleagues. The nuncio had elaborated on Pope Pius XI's Christmas Encyclical, *Ubi arcano Dei,* released on December 23, 1922, in which the Pope stressed the need for true peace to come at last to the world. Millerand, concluding that the Pope's pronouncement was aimed at France, stated that too many people had forgotten that Germany was responsible for the war and that the basis for peace could be created only if she paid for her sins. Mayer and his staff hurriedly debated the merits of walking out of the reception in protest, but considering the impending Paris Conference, to which Germany might be allowed to present her new reparations plan, they refrained. German newspapers, learning of the incident, poured out much abuse upon Mayer, obliging the German government to release to the press a note praising the ambassador for his tact, restraint, and coolness under extreme provocation and insisting that his conduct did great honor to Germany.[61]

But this unpleasant incident did not prevent the completion of preparations for the Paris Conference. Bergmann arrived in Paris on January 2 to hold himself in readiness to give any oral elaboration required on the German proposals.

Upon his arrival he was provided with an outline of the final German note which had been wired to the Paris Embassy on the previous day with the specific instructions: "In case you have an appropriate opportunity to submit our offer, and to elaborate orally on it at the conference there, you are empowered to set forth, if it is

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Including a text of the German peace proposal, the release concluded: "It was deemed inadvisable to transmit the propsoal to the Governments named unless it appeared that it would be favorably considered by the French Government. . . . The Secretary of State was informed that that Government could not view the proposal with favor as such an arrangement could not be made under the provisions of the French Constitution." Telegram, Hughes to Herrick, Washington, January 2, 1923, containing the press release text, in *ibid.*, p. 211.

[59] Harbeck, *Das Kabinett Cuno,* pp. 103–110.

[60] *Ibid.*, note 7, p. 108.

[61] See copy of Ceretti's note to Millerand and his response in telegram, Mayer to Berlin, Paris, January 1, 1923, GFM:2406H/D501063–66, T120/1328. See also telegram, Mayer to Berlin, Paris, January 1, 1923, *ibid.*, frame D501067; telegram, Rosenberg to Mayer, Berlin, January 2, 1923, *ibid.*, frame D501068; and press release of January 9, 1923, *ibid.*, frames D501069–70. There is an interesting discussion in Count Harry Kessler, *Tagebucher, 1918–1937* (Frankfurt-am-Main, 1961), entry for January 2, 1923, p. 357. There is an English translation of this useful, interesting source published under the title: *The Diaries of a Cosmopolitan, Count Harry Kessler, 1918–1937* (London, 1971); and an American edition published as: *In The Twenties. The Diaries of Harry Kessler,* Tr. Charles Kessler [no relation] (New York, 1971). A portion of the Pope's Christmas Encyclical is in Anne Fremantle, ed., *The Papal Encyclicals in Their Historical Context* (New York, 1956), pp. 221–224.

desired, the financial-technical portion of our plan in the written form of an *aide mémoire*."[62] The full, complete German offer was not sent to Bergmann until the night of January 3–4. This document bore the instructions that Germany's proposals were to be conveyed to the Paris Conference only "if an express demand for a written presentation of the German proposals is made by the Conference, . . . [and] . . . if the note is not presented it is to be treated *absolutely confidentially*."[63]

The German proposals, about which there would later be much controversy, were later summed up by Bergmann:

> Germany offered immediately to arrange an international loan of 20 milliard [billion] gold marks, bearing 5 per cent. interest and 1 per cent. amortization. Interest for the first four years was to be paid out of the proceeds of the loan; amortization was to commence after four years. Part of the loan was to be floated in Germany. One-half of the proceeds of this issue was to be applied to Germany's own requirements, and especially to the stabilization of the mark. In so far as the entire amount of 20 milliards could not be covered by loans by 31st December 1926, it was to carry 5 per cent. interest and be amortized with 1 per cent. as from that date.
>
> Germany, further, was ready, her capacity permitting, to issue after 1st January 1927, an additional reparation loan of 5 milliard gold marks, also carrying 5 per cent. interest, with 1 per cent. for amortization. Germany's capacity to do so was to be proved if the financial syndicate which floated the first large loan was able to place the additional 5 milliards abroad, by public subscription, upon normal terms and upon the general credit of the Reich.
>
> After 1st January 1931 Germany would issue, upon the same terms, a third loan of 5 milliards gold marks. Germany promised to grant to the loan syndicate all reasonable guarantees, details being reserved for negotiations with the loan syndicate. In spite of their doubts as to whether even this offer was not in excess of Germany's capacity to pay, German industrial and banking interests would support the Government in the execution of the plan. The Government would pass the legislation necessary to enlist all the creative energy and the production of the country.[64]

This offer followed the desires of the German industrialists by setting forth a final reparations figure for which Germany would be responsible. The interest rate was also increased over that of the offer presented at the London Conference, and indicated categorically that the industrial and banking interests would back the plan.

But Bergmann's revelations were not the complete story and could not have accounted for the reluctance of the German government to release all of the details of its plan in written form unless specifically requested to do so by the Premiers. Some of the details of the German proposals not discussed by Bergmann are enlightening and reveal stiff demands:

> Nothing is to be neglected which would be appropriate to endowing the mark again with a firm value and thereby securing the German economy on a firm basis, so as to give stability again to the German budget. The effectiveness of all such internal reforms and the results of the sincere exertions are dependent upon Germany's being freed from the unproductive expenditures and the economic and political burdens loaded upon it. For the practical operation of the offer it is therefore necessary to remove the restrictions of the Treaty of Versailles regarding economic matters in particular, . . . and further that it is a provision of the German offer that the occupation of Duisburg, Düsseldorf and Ruhrort be raised, and the occupation of the Rhineland be withdrawn as soon as possible. . . .[65]

Berlin obviously feared that if these details leaked out, the impression would be created that Germany desired to destroy the Treaty of Versailles, and that the French were accordingly justified in their stiff attitude. If the total plan had been presented it would have created a sensation. The full proposals represent nothing less than the culmination of Cuno's reparation policy: the attempt to revise the economic terms, if not the political, of the Treaty of Versailles. He was perhaps inclined to this end in any case, but was propelled to it in part by pressure from the industrialists. Unfortunately for Cuno, the major support from England required for the implementation of his plans did not materialize, though the British exhibited considerable sympathy for Germany. German fears regarding publication of the Paris proposals are revealed by the fact that Germany only belatedly and in piecemeal fashion released their details, and only then after the beginning of the Ruhr occupation and when charges from the French that Bergmann had nothing to offer at Paris stung Berlin into refuting them by revealing the plan's salient features.[66]

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[62] Harbeck, *Das Kabinett Cuno*, note 4, pp. 114–115; Bergmann, *The History of Reparations*, p. 163.

[63] Harbeck, *Das Kabinett Cuno*, note 2, p. 113. See Bergmann, *The History of Reparations*, p. 163.

[64] Bergmann, *The History of Reparations*, p. 169.

[65] Germany's complete proposals are in Harbeck, *Das Kabinett Cuno*, pp. 113–116.

[66] Following the breakdown of the Paris Conference, Germany, of course, deplored the fact that she had not

In the meantime, the Paris Conference convened as scheduled. Each of the governments represented except Belgium submitted a reparations plan. At the outset, Poincaré's proposal that the German views be deferred was accepted. This meant in fact that Germany was not allowed to present its proposals at all. The French premier then presented the reports of the Reparation Commission revealing Germany's default in reparations deliveries. This triggered a debate between Bonar Law and Poincaré, revealing the gulf that then existed between the British and French. But undaunted, Poincaré presented the French offers. These provided for a reduction of the total of the London Schedule of May 1, 1921 of 132 billion gold marks only if the other Allies consented to alter their share of the reparations proceeds in favor of France or granted priority for the reconstruction of the devastated French regions. While a moratorium might be accepted, it was to be partial, limited to two years, and subject to the establishment of an Inter-Allied Coal Commission in Essen, under French leadership, to ensure the continuation of coal deliveries; the exploitation of the state forests of occupied Germany; the requisition of goods in the Rhineland and the Ruhr to cover any defaults; and the seizure of customs receipts and proceeds of the coal tax in the occupied area and the Ruhr. Any default would also result in the military occupation of Essen, Bochum and other parts of the Ruhr as Marshal Foch might designate, and by the erection of a customs line east of the occupied territory.[67]

In the absence of Mussolini, who decided not to attend, the Marquis della Torretta presented the Italian scheme. This suggested a reduction of German payments on condition of a corresponding reduction of the Inter-Allied debt to Great Britain and was obviously as unacceptable to Bonar Law as the French plan had been.[68]

The presentation of the British plan, which created a sensation and much consternation in the French, Belgian, and Italian delegations, provided for a reduction of the German debt to a total of 50 billion gold marks, and a complete moratorium for four years, during which the mark would be stabilized and German finances restored with the assistance of an Inter-Allied Finance Committee in Berlin. Great Britain agreed to cancel the war debts owed to her by the other Allies on condition of the waiving of the Belgian priority in reparations payments and the forfeiture of the gold deposited in London during the war by the French and Italian governments. These conditions were unacceptable to the French, Belgians, and Italians alike.[69]

Poincaré, in particular, argued that the British plan would negate the Treaty of Versailles. Bonar Law countered that the French proposals would completely destroy German credit and make future reparations payments impossible. George Theunis, the Belgian premier, sided with Poincaré. The conference so divided could accomplish nothing and broke up in "complete but friendly disagreement" on January 4.[70]

The Germans were therefore not consulted at Paris. Yet this apparently did not come as a surprise to Berlin. Shortly after his arrival in Paris on January 2, Bergmann telegraphed Cuno: "According to general impressions here, which I have received today from Bradbury and Delacroix,

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been heard. But contenting itself with this, the German government did not make additional statements regarding their position at Paris until April 14, 1923, when the Wolff Bureau circulated some of the basic points of the German proposals, and two days later the remainder appeared in a speech delivered to the Reichstag by Rosenberg. See in Harbeck, *Das Kabinett Cuno,* note 4, pp. 114–115. Rosenberg's speech is in *Verhandlungen des Reichstag* Band 359, 10541 ff. On April 23, 1923, in response to these releases and Cuno's speech of March 6, 1923 in the Reichstag, in which he alluded to the Paris Conference, Poincaré stated that the assertions that a written German plan existed at Paris were false. Berlin allowed Bergmann thereupon to release to the Wolff Bureau a statement in which he indicated that as early as December 31, 1922, the German foreign missions had been informed that he was instructed to present and explain the German reparations plan both in oral and written forms, if he was requested to do so. He concluded: "But I had indeed, during my stay in Paris been in constant contact with certain members of the Repko, and in no way received any communication from anybody on the Allied side that my appearance before the conference was desired, or that the plan should be presented in writing. As a result, I was not in the position of making such a request of the Allied governments; . . . I had then waited in vain for such a summons, up to the breakup of the conference, and had then, on the day following its collapse, left Paris." In Harbeck, *Das Kabinett Cuno,* note 5, pp. 116–117. Bergmann in his *The History of Reparations,* p. 162, states that the date when the foreign missions were informed was December 30, 1922. He also indicates that the French were officially informed of Germany's preparations to present a plan to Paris by Mayer on January 1, 1923. For this latter point, see also Harbeck, *Das Kabinett Cuno,* note 7, p. 108.

[67] Schuman, *War and Diplomacy in the Third French Republic,* p. 287.

[68] *Ibid.*

[69] *Ibid.*

[70] Allen, *The Rhineland Occupation,* p. 272.

the German plan has no prospects of consideration."[71] Still Berlin attempted to capitalize on this omission. On January 4, Germany protested that she had not been heard at Paris, while at the London Conference, under the chairmanship of Bonar Law, German proposals, though rejected, had at least been considered. On the following day, the German government prepared a news release, published on January 6, which also deplored the rejection of the British plan and the fact that four years after the ending of the war, the reparations problem remained unsolved. Despite these disappointments, the statement concluded:

> The government clings to the conviction that only a reasonable, and for Germany, tolerable, solution of the reparations question can keep Europe from otherwise unavoidable ruin. It will not allow itself to be forced from the path indicated in the Note of November 14 and the elaborations on it which have followed and have been approved by the Reichstag.[72]

But the collapse of the Paris Conference was understood in Germany to be the point of no return. The prominent German, Count Harry Kessler, sometime diplomat and man of broad European views, and ordinarily tolerant of France, deplored the breakup at Paris. "The foot is to be placed on our neck," he predicted. Behind it, he concluded, were French fears that when Germany regained its strength, it would threaten France anew. "Thus the chains are to be laid on, so that Samson's strength can be contained."[73] Bergmann noted: "The Conference at Paris had scarcely been broken off when everyone began to speak of the occupation of the Ruhr as of an event that had now become unavoidable."[74]

But while the Ruhr occupation was considered inevitable in Berlin, apparently there was some hesitation in Paris. Poincaré found himself in a precarious situation. He was at a crossroads. Further negotiations appeared fruitless. Were he to hesitate, he would be in trouble at home, and might even be dropped from power, so intense had public opinion become for taking immediate action against Germany. To retreat, therefore, was impossible. Yet to proceed meant that France, perhaps with only Belgian assistance, would forfeit British favor. Thus Poincaré apparently hesitated momentarily. Bergmann records that certain Germans concluded that the French leader arrived at the final decision in the following manner:

> In his predicament, Poincaré went to Millerand ... for advice. Millerand, always under the influence of the steel-makers centered around de Wendel, who saw in the occupation of the Ruhr an excellent means of securing a constant supply of coal and coke for the operation of their works, advised Poincaré that he would now have to proceed in earnest with his much-talked-of occupation of the Ruhr. But Poincaré still hesitated. It was only when Le Trocquer, the Minister of Transport, a nationalist Hotspur and always an aggressive advocate of the occupation of the Ruhr, convinced Poincaré by figures that the plan prepared months ago for an enforced French administration of the Ruhr District under military protection would result in important and assured reparation profits that Poincaré was finally induced to take the dreaded step.

Bergmann did avow, however: "I cannot vouch for the absolute accuracy of the story, but I have it from a well-informed source and it sounds probable."[75]

By whatever avenue, Poincaré arrived at the decision to move into the Ruhr. But he was then faced with another necessity. Long renowned as a rigid legalist, Poincaré had to find legal justification for his proposed action. He found an answer that comported with his lawyer's heart in Paragraph 18 of Annex II of Part VIII of the Treaty. This suggests that occupation of additional German territory could be resorted to as a permissible sanction resulting from a voluntary default in payments if the phrase "such other measures" as used in the Annex, could be so construed. Furthermore, this sanction might be employed by each of the "respective governments"—meaning Allied governments—unilaterally, without requiring a general Allied agreement. These interpretations were to be hotly denied in Germany, of course, and also in Great Britain and the United States. But having arrived at this conclusion, Poincaré then sought a statement from the Reparation Commission that Germany had voluntarily defaulted in her coal shipments, as had been decided on December 26, 1922, regarding timber deliveries.[76]

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[71] Harbeck, *Das Kabinett Cuno*, note 5, p. 116.

[72] Michaelis and Schraepler, *Ursachen und Folgen* 4: p. 437.

[73] Kessler, *Tagebucher*, entry for January 5, 1923, p. 357.

[74] Bergmann, *The History of Reparations*, p. 173. The German government was informed at this time of the possible economic consequences of the proposed French occupation of the Ruhr. See detailed reports of the Coal Syndicate in Essen, the *Essener Credit-Anstalt*, the firm of Krupp, and the *Essen Handelskammer* sent from the *Zweckverband Nordwestdeutscher Wirtschaftsvertretung, E.V.*, to the *Geh. Legationsrat* Walter de Haas, in the German Foreign Ministry, dated January 5, 1923, in GFM: 9482H/H276542–52, T120/3573.

[75] Bergmann, *The History of Reparations*, p. 174.

The Commission was duly convened in Paris on January 9, 1923. Louis Barthou, its chairman and the French representative, stated that German coal deliveries had fallen below the quotas of 1922. Of the demanded 13,864,110 tons, the Germans had delivered only 11,710,365 tons and some of this had to be rejected as being of poor quality. Barthou thereupon moved that Germany be declared in voluntary default. The British delegate, Bradbury, disagreed, and the unofficial American representative, Roland W. Boyden, while concurring with Barthou's legal argument, stated that the economic conditions imposed by the Treaty were impossible for the Germans to meet. These arguments were ignored by the chairman who proceeded to the vote. The Italian delegate, the Marquis Salvaga Raggi, Delacroix of Belgium, and Barthou voted in favor, while Bradbury opposed it. Then, in a manner reminiscent of Clemenceau's parliamentary procedure during the drafting of the Treaty of Versailles in 1919, Barthou brusquely declared: *"La proposition est adoptée."* [77] This action served as the final legal point of departure for the Ruhr occupation.

The Germans admitted that they were in default but argued that the amounts were minimal.[78] Bergmann also noted that: *"Prior to the Conference at Paris it never occurred to the Reparation Commission to bring about a conflict on the question of coal deliveries,"* [79] not an altogether accurate statement, as Barthou was already thinking of this in December 1922. Nevertheless, Bergmann's conclusions are noteworthy:

> [But] coal had to furnish the legal grounds for the occupation of the Ruhr. [Germany had earlier been declared in default in timber deliveries, which was true, but the Ruhr had no timber. Its occupation could not be held valid on these grounds]. . . . Technically the Commission was within its rights, for Germany had, in fact, failed to deliver the full [coal] quantities called for, but the Commission had for many months tolerated in silence the deficiency of slightly more than 10 per cent. . . .[80]

Meanwhile, the collapse of the Paris talks ushered in a period of furious activity in various capitals. Though Bradbury speculated, in a conversation with Bergmann on January 4, that an immediate occupation of the Ruhr was unlikely, the next move was obviously up to France. He nervously asked what Germany would do in the event of an occupation. Bergmann replied that Germany would in any case declare it to be in violation of the Treaty of Versailles.[81]

Bradbury was obviously in error in his estimate of the situation. Mayer, in a telegram to Berlin on January 7, indicated that the French government on the preceding day had decided, as Marshal Foch had repeatedly urged, that a substantial military force would be needed to protect the engineers and customs officials who were to be sent into the Ruhr to obtain productive pledges. Mayer also reported that General Weygand had been recalled from the Lausanne Conference to lend support to Foch.[82] This decision had apparently been in response to the vigorous reaction increasingly noted in Germany, and the virtually unanimous attitude toward resistance, revealed especially in the press, and reported to Paris by the French Embassy staff in Berlin, who were greatly impressed with these developments.[83]

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[76] See Greer, *The Ruhr-Lorraine Industrial Problem*, pp. 120–176, for an extended discussion. See also Bergmann, *The History of Reparations*, p. 179. Bergmann, of course, rejected the legality of France's position. He also blamed Britain in part for the Ruhr occupation, because at the Spa Conference (July 1920), at London (March 1921), and in the London Ultimatum of May 5, 1921, Lloyd George's cabinet had used the threat to occupy additional German territory, especially the Ruhr District, to force Germany to make reparations payments. This threat was in fact carried out in March, 1921, when Düsseldorf, Duisburg and Ruhrort were occupied in response to the defiant attitude of the German delegates attending the London Conference of March, 1921. Disappointed because Britain failed to support Germany to the extent that he expected, Bergmann often revealed an anti-British bias.

[77] Greer, *The Ruhr-Lorraine Industrial Problem*, pp. 295–301.

[78] Memorandum, Berlin, January 10, 1923, in Germany. *Auswärtiges Amt.* Records of the Weimar Republic entitled *"Ruhrgebiet,"* National Archives, Washington, D.C., serial 3116H, frame D635816, National Archives Microcopy T120, roll 1524, signed by Karl von Ritter, *Geheimrat* in the Foreign Office, and head of the section for economic policy and reparations. This document contains specific figures as to the extent of Germany's default.

[79] Bergmann, *The History of Reparations*, p. 175. The italics are Bergmann's.

[80] *Ibid.*, pp. 175–176.

[81] Telegram, Bergmann to Berlin, Paris, January 4, 1923, in GFM: 3116H/D635759, T120/1524.

[82] Telegram, Mayer to Berlin, Paris, January 7, 1923, *ibid.*, frame D635760.

[83] Memorandum signed by *Ministerialdirektor* Karl von Schubert, *Ministerialdirektor* Gerhard von Mutius, and *Geheimrat* Karl von Ritter of the Foreign Ministry, Berlin, January 8, 1923, *ibid.*, frame D635763.

Washington developments confirmed the deteriorating situation. Hughes, in a press conference on January 8, revealed that France had decided to employ force in the Ruhr before other attempts were made to resolve the reparations question.[84] He released a further statement to the press on the following day in which he hinted of American opposition to the use of force in seeking to obtain reparations, but no formal protest against the anticipated French action was forthcoming.[85] The Germans were greatly disappointed that Hughes had not openly declared his position and Berlin requested Wiedfeldt to seek such a statement which "even if it had no consequences, would be of incalculable worth. A condemnation of the action in a confidential diplomatic document would be kept secret by France and would be of little benefit to us."[86]

But the Germans were already aware of American reticence, if not wishing to accept it. On January 6, Hughes had replied to Wiedfeldt who had attempted to reopen discussion of the German peace proposal that "so far as he was concerned, the incident was closed."[87] Had the Germans been privy to Hughes's telegram to Herrick on the same day, they would have been even more certain of the secretary's reluctance to intervene. Hughes reiterated that his New Haven speech was as far as he intended to go at the moment regarding reparations, because the United States did not wish to become a dictator or arbitrator in the reparations problem. "In placing suggestions before the French government, the government of the United States feels that it has done all that it now can do to contribute to the solution of the situation, the real control of which rests with other nations."[88]

The Americans also planned to withdraw their troops immediately from the Rhineland if the French entered the Ruhr, though the U.S. Senate Resolution of January 5, 1923, had provided for their withdrawal in the near future in any case. In a conference with Jusserand, Hughes pointed out that there was a cause and effect relationship here; the American action was in response to the rigid French stance and to the information received in Washington that the Ruhr occupation was to begin in six days. The French ambassador protested that he had no such information, but would cable for details. He did admit, however, that the French were making plans as though they were to enter the Ruhr, thereby impressing Germany with the necessity of making better reparations offers. The Frenchman also expressed hopes that the American troops would not be withdrawn, "for fear it would give a wrong impression abroad," though the American commander on the Rhine, General Allen, was of a different opinion and later expressed his doubts about the sincerity of the French, who, he affirmed, desired to occupy Coblenz and its surrounding territory when the Americans departed.[89]

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[84] Telegram, Wiedfeldt to Berlin, Washington, January 8, 1923, *ibid.*, frame D635767.

[85] Telegram, Wiedfeldt to Berlin, Washington, January 9, 1923, *ibid.*, frame D635836.

[86] Telegram, Cuno to Wiedfeldt, Berlin, January 9, 1923, *ibid.*, frame D635769.

[87] Memorandum of this conversation, *Foreign Relations of the United States*, 1922, **2**: p. 211.

[88] Telegram, Hughes to Herrick, Washington, January 6, 1923, *ibid.*, pp. 202–203.

[89] Memorandum by Hughes of this conversation, January 8, 1923, *ibid.*, 1923, **2**: pp. 47–48. Allen's remarks are in *My Rhineland Journal*, p. 485 and *passim*.

The U. S. Senate Resolution no. 395, January 5, 1923, 67th Congress, 4th session, is in United States. Congress. *The Congressional Record*, volume 64, part 2, 1349–1352, 1353–1361.

The Americans did hasten to withdraw their troops from the Rhineland immediately following the Ruhr occupation. The final evacuation was completed on January 27, 1923. They were replaced by French troops much to the chagrin of many Germans who saw American action as a misguided attempt to demonstrate United States disapproval of French action. Though the Americans carefully avoided publicly establishing this direct cause and effect relationship, it is clear that it was so intended. See Allen, *The Rhineland Occupation*, p. 279, in which he states: "Though no official statement was ever made by our government connecting the occupation of the Ruhr and the evacuation of the American Rhine holding by our troops, Europe did not fail to see in the complete departure of the American representation from the Rhine the dissatisfaction of the great trans-Atlantic Republic. Germany made much of it." Indeed, the German press was filled with editorials and articles regarding the American withdrawal. For translated excerpts from the German press sent to Washington, see United States. U. S. Military Attaché Reports, National Archives, Washington, D. C., Record Group 165, Document I.D., 2657-B-592/2, Berlin, February 1, 1923; Document I.D., 2657-B-592/50, Berlin, January 15, 1923.

General Allen, who also functioned as the U. S. unofficial observer on the Rhineland High Commission, officially departed this position on February 6, 1923, marking the end of significant U. S. activities in Europe. See his *The Rhineland Occupation*, p. 294.

See relevant documents concerning these events in *Foreign Relations of the United States*, 1923, **2**: pp. 192–194.

The Germans had earlier been made aware of the possibility of these troop withdrawals. See telegram, Hermann Fürst von Hatzfeldt, the *Reichskommissar für*

The rather feeble explanations of Jusserand reveal that the French were determined to keep the United States only partially informed regarding their intentions and thereby placated until confronted with a *fait accompli.*

By January 8, some indications of the German government's probable reaction to the anticipated Ruhr occupation appeared in a press release that Cuno circulated among American press representatives in Berlin. This stated that France now seemed bent upon obtaining its demands by force and violence. Protesting that Germany was still prepared to meet her obligations up to the limits of her ability, she was fully determined not to bow to force. Yet he emphasized that Germany's action would be limited to a refusal to work under compulsion because as he stated: "We cannot meet force with force." Germany's refusal to work would also "reveal the economic unreasonableness and the outlawry of the French designs before the whole world in their true light." He rejected the French assertions that they had the legal right to act as contemplated under the Treaty of Versailles. Since the Allies already held the Rhineland as a surety, the occupation of additional territory was not an execution of a Treaty right, "but a breach of the Treaty and an act of force against a defenseless people." [90] On the same day, the Japanese ambassador in Berlin was assured that Germany would only resist passively; "a physical resistance would only play into France's hands." [91]

But the final decisions concerning Germany's response were hammered out on January 9 in an expanded cabinet session, presided over by the Reich president, Ebert, and which included General Hans von Seeckt, head of the Reichswehr, and the Prussian minister-president, Otto Braun. In view of its importance a careful consideration of this lengthy meeting is in order.[92] Ebert disclosed that he and the chancellor had prepared a proclamation for transmission to the threatened Ruhr territory, a copy of which he read to the group. This stressed the military nature of the planned French occupation and its illegality, and called upon the people of the Ruhr to suffer patiently in the spirit of German unity, knowing that the government was endeavoring to ease their burdens and to end the occupation.[93] Those assembled agreed that this document should be sent immediately to the Ruhr, which was done on the same day. The police-president of Essen was ordered to disseminate it throughout the area, using placards, posters, and press releases.[94]

The chancellor then read a preliminary draft of another proclamation which was to be circulated later throughout the entire Reich. This was similar in tone and content to the Ruhr proclamation and also stressed the need for self-control and restraint. Germans were warned against taking any violent action against the invaders; this would only aggravate the situation. Implicit was the appeal for only passive resistance, though that term was not employed directly.[95]

The chancellor then presented additional plans and views. He stated that, if the sanctions measures were employed by France, a strong upsurge of nationalism and patriotism would occur in Germany which must be utilized to effect a reconciliation of the German people, and to strengthen their will to bear the anticipated misery, the consequence of the rapidly spiraling inflation, the bad business climate, and the reduced coal supplies which would follow the Ruhr occupation. Preparations must also be made to preserve public order, especially in the threatened territory; to provide sufficient food supplies for the Ruhr; and to make available unemployment relief for Ruhr workers. In addition, defensive measures in the East must be considered, since it was feared that

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die besetzten rheinischen Gebiete to Berlin, Coblenz, November 29, 1922, GFM: 2406H/D501052, T120/1328, concerning a conference that he had with Allen on that date.

[90] Copy of the release is in Michaelis and Schraepler, *Ursachen und Folgen* **5**: pp. 12–13.

[91] Memorandum of conversation with the Japanese Ambassador, Berlin, January 9, 1923, GFM: 3116H/D635807-08, T120/1524.

The first significant use of the expression "passive resistance," apparently occurred in a *Runderlass* transmitted to the major German diplomatic missions abroad on New Years' Day, 1923, in which it was stated that Germany would of necessity be limited "to a passive, moral resistance," in the event of the Ruhr occupation, thereby setting forth moral force as the prime ingredient of resistance. See discussion in Zimmermann, *Deutsche Aussenpolitik*, p. 145.

[92] Minutes of this session are in Harbeck, *Das Kabinett Cuno*, pp. 122–129.

[93] See copy in GFM: 3116H/D635783, T120/1524. See also in *Vorwärts* (Berlin), January 10, 1923, morning edition. This document was signed by Cuno and Ebert.

[94] Harbeck, *Das Kabinett Cuno*, note 1, p. 122; and GFM: 3116H/D635782, T120/1524, note sent by the *Reichspräsidenten* to the police-president of Essen on January 9, 1923.

[95] Michaelis and Schraepler, *Ursachen und Folgen* **5**: pp. 21–22. This document was signed by Ebert, Cuno, and the entire cabinet.

France would encourage the Poles to strike there. More specifically, Cuno suggested that:

1. Legality protests be sent to all nations that had signed the Treaty of Versailles, to the League, and to the Papacy.

2. The ambassador at Paris, and possibly the minister in Brussels, be recalled.

3. Appeals be made to international trades unions, to the Pope by the German episcopate, to the league of international law, and to the Women's World Alliance. Proclamations would be elicited from the *Evangelisch Kirchenbund* and the pacifists.

4. Extensive national demonstrations to be organized, taking various forms: proclamations of the Reich president, the Reich government, and the Reichstag, copies of which were to be widely circulated, especially in the threatened territory. Assemblies to be held throughout the Reich at an hour decided upon; tolling of church bells in national mourning; simultaneously, an hour-long work stoppage to be observed by all businesses and offices. Autos and street cars—excluding railroads—to stop at the appointed time.

5. A day of mourning to be proclaimed during which variety shows and certain movies and theater performances would be closed, all music forbidden, and curfew enforced at 10:00 P.M.

6. Other long-range plans included a boycotting of French goods and the forbidding of dancing and restriction of music.[96]

Cuno explained that the recall of Germany's ambassador from Paris alluded to did not mean that diplomatic relations were to be broken off, but that Mayer was to leave the embassy in charge of its counsellor. The recall of Germany's representatives in Rome and Brussels depended upon the actual participation of the Belgians and Italians in the invasion. Furthermore, the French, Belgian, and possibly the Italian members of the Inter-Allied Control Commissions in Germany would be informed that Germany, under the new circumstances, would not guarantee their safety.

Rosenberg was opposed to appealing directly to the world for sympathy, which, in his view, would be ineffective.[97] The foreign minister also urged the careful handling of Belgium and Italy and, even if they participated in the occupation, allowances should be made for their action. Rosenberg also warned that careful plans must be made for the protection of the French ambassador in Berlin. He concluded that for the moment the maintenance of relations with the Repko was out of the question. But somewhat cautiously he urged that Germany should not cut off all avenues to the Allies because negotiations would need to be conducted sooner or later.

Ebert also believed that appeals to the world had up to now been of little avail. He urged, therefore, that Germany demonstrate that she could exercise force and firmness unaided; this would make the best impression on world opinion. Much more important was the question of legality. Germany must not give the French the opportunity to consider themselves freed of their Treaty obligations and accordingly must abide by it, only suspending reparations deliveries on the grounds that Germany could no longer deliver these because the center of her economic power, i.e., the Ruhr, had been occupied. The *Reichsschatzminister* Heinrich Albert concurred in the latter statement, and recommended that the world be apprised of the legal aspects of the Ruhr occupation.[98] Ebert, furthermore, urged that the recall of the ambassador from Paris be carefully considered. Germany perhaps should not be lacking a reliable representative in the French capital in a time of stress. This recall, in addition, might heighten the already severe tension. As to the Repko, Ebert felt that this body was perhaps the logical place to reinitiate contact with the Allies later.

Since the Ruhr lay in Prussian territory, the attitude of the Prussian government was important. Braun was in general agreement with Cuno's proposals and hoped that it would soon be demonstrated that the French could not obtain as much coal by force as they had received previously by Germany's free deliveries. This implied that the miners must adopt a passive resistance or a policy of slowing down production. Yet Braun stressed the necessity of the German railroad workers and officials performing their function, at least to all appearances, so that the French would not send in their own railroad men. Braun supported the necessity of a unity demonstration, perhaps on Sunday, January 14, which would give the population, who, "for four years had had their senses dulled by too many crises," some indication of the seriousness of the situation. The Reich minister of the interior concurred and suggested that plans for the demonstration be placed in the hands of the states, which was immediately arranged, with the details to be handled by the *Reichszentrale für Heimatdienst.*[99] Braun also promised that the Prussian Landtag would release a short proclamation to the population of the Ruhr on January 10, somewhat paralleling that of Cuno and Ebert.[100]

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[96] Harbeck, *Das Kabinett Cuno*, note 3, pp. 122–123.

[97] Rosenberg indicated that Adolf Müller, the German ambassador in Berne, had warned him against appealing for world sympathy. Though Müller was accredited to this rather insignificant post, he was greatly respected and his advice was often sought and heeded. See discussion in Hajo Holborn, "Diplomats and Diplomacy in the Early Weimar Republic," in Gordon A. Craig and Felix Gilbert, eds., *The Diplomats, 1919–1939* (Princeton, 1953), p. 152.

[98] Harbeck, *Das Kabinett Cuno*, note 17, p. 128. The legal aspects of the Ruhr occupation indeed aroused much attention from the world's legal experts. Also regarding the legality matter, the *Oberbürgermeister* Konrad Adenauer, in a letter to Cuno on January 9, 1923, recorded that: "The present British area delegate has discussed with me the question of whether or not it would be wise for Germany, as an answer to the invasion, to declare to France that the Treaty of Versailles is no longer operative. In his opinion, . . . such a procedure would at present endanger British sympathy for Germany. He thought that it would be proper, if Germany delayed this . . . and only had recourse to this later, when such a step by Germany might appear to be the proper one." See in *ibid.*, note 5, pp. 124–125.

Simultaneously with this special cabinet session another important meeting was being held. Officials and general assembly members of the Rheinish-Westphalian Coal Syndicate had convened at the main office in Essen and decided unanimously to move operations to Hamburg, beyond the threatened Ruhr. The Syndicate, an organization representing coal-mine owners and coal dealers in the Ruhr, was primarily concerned with controlling coal distribution and prices. Though a private agency, government representatives were also members and the organization enjoyed semi-official status. The decision to move was the culmination of discussions held on January 7 and 8, to consider measures to thwart French plans.[101] The cabinet session then in progress was abruptly informed that beginning immediately the Syndicate's entire technical organization, key documents, papers, and personnel were to be moved by truck and special train. Only a skeleton force would remain in Essen. The organization also asked the government to underwrite certain financial needs attendant upon the move. The cabinet paused in its other deliberations, and after some debate, granted the request.[102] Ebert remarked that the action of the Coal Syndicate was especially fitting: "It is wise that the mine owners take the first step [against the Ruhr occupation], and make the first sacrifice." Furthermore, he continued, this would hinder the French, who by losing the apparatus of the organization, must build their own in order to exploit the Ruhr mines. Also, he concluded, the workers in the Ruhr would be especially impressed and heartened by this action. This measure of the Coal Syndicate has been widely accepted as the first substantial challenge to the French and Belgians and as "the opening shot in the campaign of passive resistance." [103]

The special cabinet session of January 9, after much discussion, adjourned amidst general agreement with Cuno's projected action. But the Coal Syndicate and the government were not alone in their activity. Cuno must have been gratified to receive on the same day a note signed by many prestigious organizations such as the *Zentralverband des Bank-und Bankiergewerbes,* the *Deutscher Industrie-und Handelstag,* and the *Hansabund,* pledging their full support for the Reich government as it prepared to enter the fray with the invading powers.[104] Also on January 9, Cuno was informed by the Prussian government that the workers were rallying around the Reich government. The *Freien Gewerkschaften* and the Socialist unions in the Ruhr and Rhine territories had voted to cease work from 11 : 00 to 11 : 30 on January 15 in both the occupied and unoccupied territory to protest the destruction of the German economy, the Peace Treaty, and French militarism, and as a symbol of passive resistance. A request was made that this information not be released to the press, "since there is danger that this action might be prevented by the French." [105]

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[99] *Ibid.,* note 18, p. 128.

[100] Braun's proclamation was forthcoming on January 10, 1923. See *ibid.,* note 13, p. 127. Braun was also obviously pleased to be included in the session of January 9, but felt that there should be closer relations henceforth between the Reich and Prussian governments. On January 11, Braun, in a somewhat petulant letter to Cuno, insisted that the Reich government keep its Prussian counterpart better informed regarding its plans and "that the Prussian government desired henceforth to take part in every negotiation which touched upon Prussia's fate. Only in this way can the Reich and Prussia in the hour of great need and danger work together to our mutual benefit. . . ." See in *ibid.,* pp. 131–132. The chancellor answered on the following day that he likewise valued Prussian representation and subsequent cabinet deliberations were often attended by Prussian representatives. *Ibid.,* note 1, p. 132. These developments mitigated somewhat the antagonisms which often appeared between these two governments; the Prussian administration was suspect by many in the Reich regime because it was dominated by the Socialists.

[101] See discussion of the decision to move to Hamburg in Hans Spethmann, *Der Ruhrkampf 1923 bis 1925* (Berlin, 1933), pp. 42–44. See two documents containing the formal conclusions arrived at on January 9 in Hans Spethmann, *Zwölf Jahre Ruhrbergbau aus seiner Geschichte vom Kriegsanfang bis zum Französenabmarch, 1914–1925* (5 v., Berlin, 1929–1931) **3**: pp. 319–321. For a general account of the Coal Syndicate see Archibald H. Stockder, *Regulating An Industry. The Rheinish-Westphalian Coal Syndicate* (New York, 1932).

[102] Harbeck, *Das Kabinett Cuno,* note 20, p. 129.

[103] Report, dated January 15, 1923, from the American Military Attaché's Office, Berlin, to Washington, U. S. Military Attaché's Reports, Record Group 165, Document I.D., 2657-B-594/50. This report states that the movement of the Syndicate's officials and documents began on January 9 and was completed on the morning of January 11. The Syndicate then opened its office at the "Kirdorf House" in Hamburg. It was also noted that the move in no way restricted the authority of the organization over the mines in the Ruhr. Despite the move, members of the Syndicate were ordered to continue coal reparations deliveries until further notice. See in Spethmann, *Zwölf Jahre Ruhrbergbau* **3**: p. 321.

The Reich government was nevertheless apprehensive and distrustful of the workers. There was every indication that they intended to oppose the occupation, and the government feared on the one hand an excessive reaction and on the other that the response would not be forceable enough. Berlin, therefore, hoped to guide public reaction, and that of the workers in particular, into acceptable channels, confronting the invaders with a united front orchestrated by Berlin.

The workers had previously discussed the Ruhr and its vulnerability and had developed an attitude toward its possible occupation. As early as November, 1920, at an international workers congress in London, the Ruhr, and the steps that should be taken if it were occupied, were on the agenda. A French labor representative, Léon Jouhaux, promised that if the French "militarists" attempted to coerce French workers to participate in the Ruhr occupation, they would refuse to work.[106] In early 1921, when the Allies occupied Düsseldorf, Duisburg, and Ruhrort, the *Arbeiterschaft* of the Rhineland planned a general strike in retaliation. Only a special meeting in Cologne of the leadership of the *Allgemeinen Deutschen Gewerkschaftsbundes* resulted in a decision to restrain the workers.[107]

As 1922 drew to a close and the stiffer French attitude emerged, there was also a parallel development of the will to resist in the *Gewerkschaften.* A meeting of the major organizations of the unions on December 11, 1922, demanded that the Treaty of Versailles be revised so that the life of the German people, threatened by impossible reparations burdens, might be assured. Another assertion was that while German workers were prepared to cooperate in the reconstruction of Europe, they were unalterably opposed to the "unfounded lies" that Germany was alone responsible for the war which was the basis upon which the impossible reparations demanded rested.[108]

Two days prior to this, there had occurred in the Saalbau in Essen an assembly which represented all economic circles of the Ruhr and Westphalia. A declaration, agreed to unanimously, repudiated the occupation of Düsseldorf and Duisburg, labeling it a violation of international law and of the Treaty of Versailles. A conference of mine workers of the Ruhr Territory on December 31, further warned that "any invasion by France would only lead to a sharpening of the economic distress of the worker. . . ." [109]

Another major conference of the *Freien Gewerkschaften* and Socialists unions also met at Essen on January 9. Agreement was reached that some protest must be made if the threatened invasion occurred. A general strike was rejected, partly to confound the French, who expected a strike and planned to replace the striking workers with their own men.[110] Furthermore, the unions did not desire to give credence to reports in the American and French press that they would strike if the invasion occurred at the behest of the industrialists. The workers, therefore, wished to avoid the impression that they were at the disposal of their employers. The general strike was to be reconsidered, however, if future events warranted it. At the outset, the workers were to be content with half-measures: the half-hour work stoppage on January 15. This was to be employed as a moral protest and as symbolic of passive resistance. For the overall struggle against the Ruhr occupation, it is recognized, of course, that this short strike was insignificant and therefore that the means of opposing the orders of the occupation forces, the heart of the passive resistance, must "develop from case to case." This ultimately meant a systematic resistance to such orders.[111]

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[104] Michaelis and Schraepler, *Ursachen und Folgen* **5**: note 2, p. 15.

[105] Letter, *Die Preussische Staatsregierung* to Cuno and other officials, Berlin, January 9, 1923, in GFM: 3116H/D635750, T120/1524.

[106] Lothar Erdmann, *Die Gewerkschaften im Ruhrkampf* (Berlin, 1924), p. 62.

[107] *Ibid.*, p. 63.

[108] *Ibid.*

[109] *Ibid.*, p. 64.

[110] The German railroad workers did surprise the French by keeping on the job. See telegram, Herrick to Washington, Paris, January 10, 1923: "General Buat added that he had originally intended to send two sections of French railway troops to assure this movement [into the Ruhr] but since the German railway men are carrying out the [preliminary] movement with the greatest efficiency he has countermanded the order." *Foreign Relations of the United States,* 1923, **2**: p. 49.

The establishment of the principle of passive resistance by the workers was also denoted in the proclamation, forthcoming on January 11, after the occupation had begun, to the *"Volks-und Schicksalsgenossen am Rhein, an der Ruhr und im übrigen Westfalen,"* and based on the decision arrived at in Essen two days before. It was signed by officials of the *Gewerkschaften* and other organizations and was aimed at a unanimous demonstration against the invasion on January 15, the half-hour work stoppage plan. Though the appeal recognized that "we neither can nor will oppose this [foreign] force, with force," it also stated that "we must bend to foreign power but not without protest." [112]

On the same day, the *Allgemeine Deutsche Gewerkschaftsbund,* the *Allgemeine freie Angestelltenbund,* and the *Allgemeine Deutsche Beamtenbund* prepared an appeal to the German workers and the workers of the world expressing similar sentiments, and stated that the orders of the invading powers were to be ignored. The organizations also appealed to the workers of other countries to rally to the support of their embattled German comrades.[113]

The passive resistance that emerged was a new form of defense, the motto of which became: *"Waffenlos, aber nicht Wehrlos,"* i.e., a moral response to the use of force.[114] As the historian Lothar Erdmann concluded:

> The French and Belgians, in order to obtain their goals immediately and to enjoy substantial results, must obtain the active cooperation of officials, employers and employees. If these were to refuse to aid the invaders, then mind would seize a victory over matter and force, which would be a modern-day wonder indeed, if not a miracle. In the exciting days just prior to the Ruhr's occupation, many believed in this miracle and desired fervently to achieve it. Out of this belief and hope sprang the passive resistance, and faith in it became its soul. Therefore, the device of passive resistance was not of the government, nor was it a cunning plan of the employers. Indeed, it required no special intellectual preparation. The humiliations of the foregoing years and the new breach of the peace and legality sufficed. What was at issue was what form the resistance would take and whether the responsible political leaders and the employers would be sensible enough and forward looking enough to make prompt use of it before the passage of time blunted the instrument.[115]

Erdmann perhaps credits the workers too much for the establishment of the passive resistance, though they clearly desired to employ it on a limited scale from the outset. The government had earlier referred to this kind of response and the Coal Syndicate also acted to resist the invasion. However, the government did hesitate to grasp and wield the instrument being forged. On January 10, a conference was held in the *Reichsverkehrministerium* with representatives from the Foreign Ministry, the minister of the interior, the War Ministry, and the Chancellery, on the subject of the conduct of the railroad employees in the face of the occupation forces. The conference agreed that the railroad men were not to refuse orders of the occupation officials because this would only lead to the use of force or a substitution of French for German railroadmen. Furthermore, if some of the trains were transferred from the Ruhr by the Germans, the French would simply impound the remainder, leaving the population bereft of rail transport. Thus stern German reaction would only increase the burdens of the Ruhr population. Therefore the conclusion stated that: "The railroad men were to offer no resistance, not even passive resistance, to the French." [116] The Reich government was obviously reluctant to employ passive resistance at this time. The German workers' views were in advance of official policy in this matter, though even they were loath to employ the general strike or to use force. Hoping to confuse the French, they also did not desire to appear to be the tools of the industrialists. This accounts for their initial limited employment of passive resistance, which later, encouraged by government legal and economic measures, became central to Germany's opposition to the Ruhr occupation.

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[111] Erdmann, *Die Gewerkschaften im Ruhrkampf,* p. 68.

[112] *Ibid.,* p. 66.

[113] Spethmann, *Zwölf Jahre Ruhrbergbau* **4**: p. 368.

[114] Hannes Pyszka, *Der Ruhrkrieg* (Munich, 1923), p. 18.

[115] Erdmann, *Die Gewerkschaften im Ruhrkampf,* p. 61. For similar statements regarding the primacy of the workers in initiating passive resistance, see Ferdinand Friedensburg, *Die Weimarer Republik* (Berlin, 1946), p. 89; and Werner Conze, *Die Zeit Wilhelms II und die Weimarer Republik. Deutsche Geschichte, 1890–1933* (Tübingen, 1964), p. 188.

[116] Harbeck, *Das Kabinett Cuno,* pp. 129–130. For an official account of the railroads during the Ruhr occupation, for Germany, see *Deutsche Reichsbahn Gesellschaft. Ruhrbesetzung und Reichsbahn* (Berlin, 1926); and for Prussia, *Ministerium der Offentliche Arbeiten. Ruhrbesetzung und Reichsbahn* (Berlin, 1926). These are similar publications.

Shortly after the beginning of the occupation, however, public opinion forced a change in the government's position regarding the railroads, and on January 16, the cabinet was forced to revise it, permitting the railroad men to engage in passive resistance. See discussion in Harbeck, *Das Kabinett Cuno,* pp. 146–151, and note 2, p. 130.

In the meantime, as evidence of the impending Ruhr occupation mounted, the Germans became increasingly apprehensive regarding Belgium's position. The attitude of Léon Delacroix verified that certain important Belgian officials did not countenance Belgian participation in the occupation. Yet others felt that Belgium could ill-afford to be isolated from France, its only reliable ally. Furthermore, there were economic considerations, and the Franco-Belgian military convention of September 7, 1920, to keep intact. One scholar has suggested additional factors:

> To the north Holland was somewhat unfriendly, refusing to permit improvements in the approach to Antwerp. Should France become master in the industrial area of western Germany, the Antwerp entrepôt trade was doomed. The only way to prevent economic encirclement was to go with France, and thus secure an untrammeled outlet to Germany. Nor could any government remain in power in Brussels if it abandoned reparations.[117]

Accordingly, on January 6, the Belgian cabinet voted to participate in the occupation. The Belgian foreign minister then presented the government's case to the Chamber on January 9. He placed the blame for the strife between Germany and France squarely on the shoulders of the former. He stressed the bitterness with which Belgium felt herself compelled to intervene in the Ruhr Territory to obtain her just dues. Belgium had hoped, he continued, that Germany had repented and would meet her treaty obligations. But this had proved groundless. Though Belgium had earlier desired peaceful solutions, these had proved futile. Therefore, in order to obtain her rightful reparations, and to ensure future security, force must now be employed. The Belgian parliament readily ratified the cabinet's decision. Only the Socialists were opposed, which resulted in the resignation of Émile Vandervelde, head of the Belgian Workers Party, from the cabinet. Yet this difference of opinion concerned appropriate means of obtaining reparations, not whether these should be obtained.[118]

As the crisis heightened, the German government began implementing some of the cabinet decisions of January 9. The American ambassador in Berlin, Alanson Bigelow Houghton, telegraphed Hughes on the tenth that he had been informed that Cuno would not appeal for support either to the United States or to other countries, intending rather to "let history take its course." Cuno hoped, however, that American troops would remain on the Rhine making the treatment of Germans less severe and in a time of great tension, "possibly avert more serious trouble." [119] Yet while the chancellor protested that he would not appeal directly for support abroad, certainly he hoped that foreign nations would of their own volition render it, strengthening Germany's position. The first of a series of three telegrams sent by the Reich Foreign Ministry to its missions abroad on January 10 betrayed this. This message stressed that Germany stood alone and therefore could only depend upon itself. The Reich would not directly seek foreign assistance. The German people would depend entirely upon their own strength, to carry out their moral resistance, hoping that before a flagging of their strength, the growing understanding of the world would compel it freely to come to Germany's aid. There also would be no radical experiments in defense. Only the moral force of "an agitated and exhausted people" could be used in the struggle. It was fully understood, however, that this could not last forever, but when it became clear that the German people were struggling to preserve Europe and European culture from collapse, perhaps aid from abroad could be forthcoming.[120] The remaining two dispatches stated that the Foreign Ministry would protest the invasion as a breach of the

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[117] Miller, *Belgian Foreign Policy*, p. 122. See also discussion in Allen, *The Rhineland Occupation*, p. 267.

[118] Belgium. *Chambre. Annales*, 1923, **1**: entry for January 9, 1923, pp. 360–363, as quoted in Miller, *Belgian Foreign Policy*, p. 122. The German minister in Brussels, Otto Landsberg, immediately informed his government of this development. Telegram, Landsberg to Berlin, Brussels, January 9, 1923, GM: 3116H/D635768, T120/1524. See also James G. Whiteley, "Belgium's Reasons for Cooperating with France in the Occupation of the Ruhr District of Germany," *The Economic World* 1923: pp. 184–185.

[119] *Foreign Relations of the United States*, 1923, **2**: p. 48.

[120] Telegram, Rosenberg to selected Foreign Missions, Berlin, January 10, 1923, GFM: 3116H/D635828-29, T120/1524.

Treaty of Versailles and of international law, and that: "Germany's only weapon in the unequal conflict is that of law and morality. . . . The German government is driven to . . . passive resistance. . . ." The German diplomats abroad were also instructed to promise the foreign powers that the Reich government would attempt to compel the population through public proclamations to exercise prudence, self-restraint, and perseverence, and to restrain the workers from strikes. There would be no breaking off of diplomatic relations with France and Belgium. However, of necessity there would be a suspension of reparations deliveries to the treaty-breaking powers because Germany's delivery capabilities, limited in any case, were now reduced to a bare minimum by the loss of Germany's prime producing area, for which the occupying powers must bear the blame, not Germany.[121]

Germany also continued to hold to the slender hope that French public opinion might impose some restraint on Poincaré's action, but Mayer ascertained by January 9 that only the Socialists and Communists were openly opposed, with only the latter taking active steps by staging public protests. In any event, Socialist influence was minimal in France and even a united effort of all Socialist factions, which was not likely, would do little to influence the government's action.[122]

By January 10, there was little doubt that the Ruhr occupation was imminent. The Prussian government reported to Cuno that France, through the Inter-Allied Rhineland Commission, had ordered transport trains for that date and a special train for General Jean Marie Degoutte, the commander-in-chief of the French army on the Rhine, who had been designated the commander of the occupying forces. The German delegation attached to the Inter-Allied Rhineland Commission in Wiesbaden wired that three major troop movements were planned by the French from Saargemund and Weissenburg, each of twelve troop trains, and one from the Perl area of twenty-four trains, all of which were to be set in motion on January 11, 1923. These were to be unloaded at Mörs, Neues, Krefeld, Gräfenbreich, Düsseldorf, and Duisburg.[123] General von Seeckt informed the government that he had identified the French and Belgian units involved and set the figure of the initial forces at 35,000 men, supported by an unknown number of tanks and artillery.[124]

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[121] *Ibid.*, frames D635830-34.

[122] Telegram, Mayer to Berlin, Paris, January 9, 1923, *ibid.*, frames D635812. There is evidence that the French hesitated before taking the final plunge. The American assistant military attaché in Paris, Lt. Col. John R. Thomas, Jr., reported to Washington on January 10: "I was informed yesterday by a member of the French Foreign Office that a sigh of relief had gone up in the Quai d'Orsay when it was finally determined to take action and settle definitely the French threat of taking sanctions in the Ruhr." U. S. Military Attaché Reports, Record Group 165, Record I.D. 2657-C-130/5.

[123] Memorandum, *Die Preussische Staatsregierung* to Cuno and other officials, Berlin, January 10, 1923, GFM: 3116H/D635838, T120/1524.

[124] Memorandum of telephone call from von Seeckt to person unknown, Berlin, January 10, 1923, *ibid.*, frame D635857. On the same day, the American ambassador in Paris, Herrick, wired Washington that the American military attaché in the French capital had been informed that French troops, totaling 10,000 men, were to move into the Ruhr on January 11, 1923. See in *Foreign Relations of the United States*, 1923, **2**: p. 49. The French seem to have indicated such figures to further their deception in Washington. In any event, by the end of the month some 45,000 French and Belgian troops were in the Ruhr. See report from the U. S. Military Attaché's Office in Madrid, January 31, 1923, in U. S. Military Attaché Reports, Record Group 165, Document I.D. 2015-602/4. Aircraft, as well as tanks and artillery, were also involved. No detailed information regarding these is readily available, though Erich Kern, in his recent study, *Von Versailles zu Adolf Hitler* (Göttingen, 1961), p. 191, states that over 100 tanks and at least 200 aircrafts were used at the outset, a figure which is perhaps fairly accurate.

Von Seeckt did not authorize action being taken against the invaders. As one scholar has observed: "Seeckt, who continuously participated in the cabinet meetings, agreed with the policy of the government and was opposed to any active resistance." See in F. L. Carsten, *The Reichswehr and Politics 1918 to 1933* (Oxford, 1966), p. 154, by permission of the Clarendon Press, Oxford. However, after the Ruhr occupation was a fact, von Seeckt was galvanized into action. Carsten notes:

"As there was the possibility of an armed clash with France—for example, if the French advanced further into Germany—measures of mobilization were taken, formations of the second and third lines were organized, volunteers—*Zeitfreiwillige*—were enlisted beyond the strength permitted to the army by the Treaty of Versailles, and weapons were bought in neutral countries. All these measures were approved and financed by the government. Thus Major-General Hasse bought 100 Fokker fighter planes in Holland; . . . . The navy had ten fighter seaplanes built at the Heinkel works at Warnemünde, which were assembled and tried out in Stockholm. Within the frontier defence formations a secret organization, the *Feldjäger*, was formed, and its members were trained for guerrilla fighting behind the enemy lines. Lieutenant-General von Lossberg, the commander of *Wehrkeis* VI (which included the Ruhr area), especially, was active in the western provinces in assembling the formations destined to swell the ranks of the army in case of an emergency. His liaison officer to

Later the same day the French and Belgians acted officially to initiate the Ruhr occupation. Shortly after noon on January 10, Pierre de Margerie, the French ambassador in Berlin, and A. Nieuwenhuys, the Belgian chargé d'affaires in the German capital, presented themselves to the Reich foreign minister, von Rosenberg. The latter was informed that in view of German default of coal and wood reparations deliveries, on the basis of Paragraphs 17 and 18 of Annex II, Part VIII of the Versailles Treaty, a control commission of engineers would be sent into the Ruhr Territory to supervise the acts of the Coal Syndicate so as to obtain productive pledges, thereby guaranteeing delivery of all reparations payments properly due the Allies. In the interest of the commission's security, it would be accompanied by certain military forces, but neither France nor Belgium intended to initiate military operations. Rosenberg was further assured that no outright military occupation of the Ruhr was envisioned. But should obstructions be encountered, reprisals would be inevitable and immediate.[125]

While it was therefore certain that the French and Belgians were prepared to march, the Germans were unsure of Italy's position, though there were rumors that Italians were also prepared to intervene in the Ruhr. The German Foreign Ministry was exceedingly vexed with the attitude of Count Alessandro de Bosdari, the Italian ambassador to Berlin, who, in response to repeated queries, seemed unbelievably ill-informed regarding his government's intentions.[126] Some light was shed on the Italian attitude on January 10, when Mussolini conferred with the German ambassador at the Quirinal, Konstantin von Neurath, who reported that the premier felt himself forced to support France's continental policy because of England's attitude at the recent Paris Conference, though he had urged moderation on the French and would continue to do so, hoping for an eventual understanding between France and Germany. Neurath suggested, however, that Mussolini's attitude was perhaps explained by his continued

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the para-military organizations was General von Oven, who was discharged from the army after the Kapp Putsch on account of his dubious attitude and was now the leader of the *Stahlhelm* at Goslar. According to his own testimony, he was to prepare in the district of Hanover, through his personal contacts, the envisaged incorporation of the patriotic associations (*vaterländische Verbände*) into the Reichswehr for its reinforcement. The practical details were in the hands of a lieutenant-colonel who was on the active list. The associations with which General von Oven made contacts for this purpose were: the *Turnerschaften* of the *Deutschvölkische Freiheitspartei*, the *Stahlhelm*, the *Jungdeutsche Orden*, the Battalion Hindenburg, the Students' Corporations, the National Socialists, and some smaller local organizations." In *ibid.*, pp. 155–156. George Wolfgang Felix Hallgarten, in his *Hitler, Reichswehr und Industrie. Zur Geschichte der Jahre 1918–1933* (Frankfurt-am-Main, 1955), p. 22, also notes certain steps taken by von Seeckt to defend Berlin, in case the Allies moved beyond the Ruhr border. He ordered the stationing of anti-aircraft in the capital and the assembling of aircraft nearby. At the same time he issued orders for the troops nearest the Ruhr, the 6th Division at Münster, to yield to enemy troops if they appeared in that area, and to take up positions shielding Berlin.

Another student of the German military, Harold J. Gordon, describes von Seeckt's attitude at this time: "Despite all the odds against Germany, he [von Seeckt] was determined to fight if France moved farther [beyond the Ruhr] into Germany. It was in January, 1923, that he said to the American ambassador—doubtless hoping that his words would be relayed on to Paris: 'The distance from Dortmund to Berlin is indeed not great, but it leads through streams of blood.'" See in his book, *The Reichswehr and the German Republic, 1919–1926* (Princeton, 1957), p. 255.

Standard general accounts of the German military are: Gordon A. Craig, *The Politics of the Prussian Army, 1640–1945* (New York, 1955); and Walter Goerlitz, *History of the German General Staff*. Tr. Brian Battershaw (New York, 1952).

[125] These documents are in GFM: 9482H/H276561-65, H276567-71, T120/3573. The control commission was subsequently referred to as the *Mission Inter-Alliée de Contrôl des Usines et des Mines* (MICUM), or initially sometimes as *"Mission Coste,"* after the French mines chief. See also telegram, Rosenberg to selected Foreign Missions, Berlin, January 10, 1923, GFM: 3116H/D635828-29, T120/1524.

The French ambassador in Paris also received copies of these documents. See Mayer's telegram to Berlin, Paris, January 10, 1923, in GFM: 9482H/H276556-60, T120/3573. See also frame H276590. See Leopold von Hoesch's telegram to Berlin, Paris, January 11, 1923, in *ibid.*, frames H276667-72, for additional copies in French of the papers transmitted to Mayer on January 10. Hoesch was the German counsellor at the German Embassy in Paris.

The German minister in Brussels also received copies of documents transmitted to Rosenberg in Berlin. See *ibid.*, frames H276630-32, H276634-36, for these, transmitted to Berlin also on January 10, 1923. Frames H276603-04 contain Landberg's telegram of the same date indicating his transmission of these copies to Berlin.

[126] Memorandum, signed by Adolf Georg Otto (Ago) von Maltzan, *Ministerial-direktor* at the Foreign Ministry, Berlin, January 10, 1923, GFM: 3116H/D635839-40, T120/1524. There were also rumors that Italy planned to confiscate German funds in the Banco di Roma, which apparently remained only rumor. For Italy and Germany in this period, see Baptiste Duroselle, *Les Relations internationales de L'Allemagne et de L'Italie de 1919 à 1939* (Paris, 1967).

anger at being deprived by the British of an expected remission of war debts. In any case, Italian support for French policy continued for the time being.[127]

It was not until the actual date of the Ruhr occupation, January 11, 1923, that the German government was at last informed by the counsellor at the Italian Embassy in Berlin, a certain Guarneri, that Italy was to send only two engineers into the Ruhr, that no military forces were to be involved, and that no formal note was to be sent to Berlin as had been done by the French and Belgians.[128] This limited participation led the Germans to continue reparations coal shipments to Italy, which might influence Italy to cease supporting the French and also, astutely, to indicate to the world that reparations would be paid if force were not employed in seeking them.[129]

In the meantime, the residents of the Ruhr, in tense anticipation of the events expected on January 11, took part in several demonstrations. In Essen many citizens gathered in a concert hall to hear Johannes Hans Bell, vice-president of the Reichstag, and a native of Essen, exhort them to resist the invasion with true perseverance. He said that the Ruhr action was proof of France's intention to stay on the Rhine forever, and that Germany should resist to the utmost, cost what it might. Following this rousing appeal, the people poured into the streets, shook hands, marched, and sang patriotic songs. The strains of *"Deutschland, Deutschland über alles,"* and *"Ich bin ein Preusse,"* could be heard in many parts of the city.[130]

On January 11, the waiting was over; as almost an anticlimax, the French and Belgians began their advance into the Ruhr. The French, moving from Krefeld, soon encircled Essen, their first objective, and Poincaré, in the course of a speech that he delivered to the exultant French Senate on that day, read a telegram from Degoutte:

> It was 1:00 in the afternoon as our troops entered Essen. The Coal Syndicate and the offices of the Railroad Director were immediately occupied by limited detachments. The bulk of the troops remained outside of the city. A perfect union has been established with the Belgian troops, which hold the Dinslaken and Sterkrade areas. No untoward incidents are recorded. All is calm.[131]

Thus was concluded the initiation of the Ruhr occupation. Relations between the two invading powers and Germany now entered another phase which was to poison the atmosphere of Europe for many months to come.

Cuno had attempted to develop two parallel, interrelated policies: one economic, and the other political. Of these, the economic was most important and concerned reparations. Following his own inclinations and certainly under considerable pressure from the industrialists, and from other segments of German life, Cuno eventually, and in successive stages, developed a plan which envisaged a revision of the Treaty of Versailles. Cuno clearly had no intention of proceeding to a reparations fulfillment policy. Up to a point, this policy even enjoyed a measure of Belgian support, but depended primarily upon the British. But the Belgians were prevented by several considerations from developing a revisionist approach to reparations, despite the efforts of officials such as Léon Delacroix, who labored to arrive at some equitable solution.

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[127] Telegram, Neurath to Berlin, Rome, January 10, 1923, GFM: 3116H/D635842, T120/1524.

Neurath reported to Berlin on January 11, 1923, in a telegram, that the January 11 edition of the newspaper, *Giornaledi Roma*, had reported that the Italian government was attempting to arrange negotiations between France, Italy, and Belgium with Germany, excluding Britain which had isolated herself from continental affairs; yet Italy persisted in its involvement in the Ruhr occupation for the moment. The Italians apparently hoped to prepare the way for an understanding on the continent thereby laying the basis for a European recovery. See in *ibid.*, frame D635898.

[128] Memorandum, signed by von Schubert, von Mutius and von Ritter, Berlin, January 11, 1923, *ibid.*, frame D635865. See also telegram, von Maltzan to selected Foreign Missions, Berlin, January 12, 1923, GFM: 9482H/H276602, T120/3573. The Italians were especially pleased that the various proclamations made by the German government had not mentioned Italian involvement, which had made "a favorable impression." Of course, it is worthy of note that the German proclamations had been drafted before the German government was aware of Italian intentions. See also Rosenberg's note, Berlin, January 12, 1923, GFM: 3116H/D635905-06, T120/1524.

[129] Telegram, Neurath to Berlin, Rome, January 12, 1923, GFM: 9482H/H276654, T120/3573; and telegram, Rosenberg to Neurath, Berlin, January 13, 1923, *ibid.*, frames H276655-56.

[130] Friedrich Grimm, *Vom Ruhrkrieg zur Rheinlandräumung. Erinnerungen eines deutschen Verteidigers vor französischen und belgischen Kriegsgerichten.* (Hamburg, 1930), pp. 22–23. See also report of the American Military Attaché's Office, Berlin, January 15, 1922 [*sic*, 1923], U. S. Military Attaché's Reports, Record Group 165, Document I.D. 2657-C-130/9.

[131] *Journal officiel. Débats parlementaires. Sénat*, 1923, 1: p. 32. For detailed first-hand accounts of the beginning of the Ruhr occupation and the entry of the French into Essen, see report of the U. S. Military Attaché's Office in Berlin listed in note 130. See also account in George Eric Rowe Gedye, *The Revolver Republic. France's Bid for the Rhine* (London, 1930), pp. 90–93.

For a detailed account of exact initial military dispositions, see report to Washington by the American military attaché in Paris, Col. T. Bentley Mott, January 19, 1923, in U. S. Military Attaché Reports, Record Group 165, Document I.D., 2657-C-130/7.

For an account of this period, see also Jean Claude Favez, *La Reich devant l'occupation franco-belge de la Ruhr en 1923* (Genéve, 1969).

London was also unwilling to go beyond a certain point in accommodating Cuno; the limits were revealed by the British reparations plan introduced at Paris. The British assuredly did not desire to destroy the Entente, though displaying sympathy toward Germany. That Britain also exhibited a measure of uncertainty was revealed at a conference between Hughes and Sir Auckland Geddes, the British ambassador, at Washington on December 18, 1922. The British statesman stated that Bonar Law considered the threatening situation in Europe to be so serious as to merit some step being taken by the United States, though he did not know precisely what could be done. He simply hoped that something would occur to the secretary of state which might help to relieve it.[132] The British were obviously not inclined to take drastic action without United States support. This was not forthcoming. On the contrary, the United States took the opportunity to evacuate their troops from the Rhine, only again intervening in Europe after the fever of the times had subsided, though the essentials of the later Dawes Plan had been posed by Hughes, in response to Cuno's and others' earlier suggestions, revealing the future's emerging pattern.

Cuno had also depended upon the United States. His second policy, the attempts to effect a political solution to the European security problem, was calculated to help create the climate of opinion favorable for his economic policy, by means of a Rhineland peace plan. This presupposed United States mediation. While America failed to pursue this vigorously, the French rejected it as being inadequate and even dangerous. Unable to find notable assistance in England and in the United States, Cuno's Germany was forced to face alone the wrath of France and Belgium, at least initially.

One aspect of the German response to the Ruhr occupation merits a brief assessment. The Reich government had used the term "passive resistance" prior to the Ruhr occupation, had helped create the climate for it, and was no doubt determined to employ it to some degree. But Berlin, at the outset, forbade the railway workers and officials to resist the invasion, even passively. At this point the surprisingly strong will to resist, especially manifested in the action of the Coal Syndicate, which it may be stated, initiated the passive resistance, in the *Gewerkschaften,* and among the population at large, surged ahead of that of the Cuno government. Almost immediately, Cuno was forced to revise his position and shortly after the beginning of the occupation, when passive resistance had clearly emerged as a reliable instrument, the Reich government adopted measures to guide, maintain, sustain, and enforce it. However, opinion varies greatly regarding the government's initiation of passive resistance, or lack thereof, and the degree to which it was manipulated by Cuno. H. G. Daniels, in his *The Rise of the German Republic,* for example, stated: "The Cuno Cabinet, while pretending that passive resistance was absolutely spontaneous, counted on implicit obedience [to the decrees and laws which later established it]." [133] But Gustav Stresemann later insisted that in fact the government had been forced to support passive resistance by popular demand.[134] The literature concerning this era suggests that German analysts generally espouse the view that passive resistance sprang spontaneously from the German *Volk,* a nice romantic notion, and was only belatedly utilized by the government; non-German writers most often adopt the interpretation that the German government was mainly responsible for the initiation of the policy.[135] The evidence reveals that the truth lies between the extremes.

Regarding France, and its position in this period, it clearly saw itself as the last bulwark against a resurgent Germany. Paris, accordingly, after the coming to power of Poincaré, and despite some vacillation and hesitation, generally pursued an inexorable course leading to the Ruhr occupation. The occasional hesitation of the French is explained by their fear of wrecking the Entente and also apparently by their hopes to deceive the United States as to their real intentions. Though the French were willing to discuss reparations matters, there was always a hard core of stiff demands contained in their proposals in this era. Had they been disposed seriously to seek an accommodation with Germany, they would have seized the opportunity to conclude a peace on the Rhine, even without United States involvement, as was done later at Locarno. Of course, Poincaré distrusted Cuno's sincerity. The French assuredly had reason to distrust the Germans. Cuno's reparations proposals could only seem provocative and contemptuous to the French. Furthermore, the Germans made demands and requests for leniency seemingly without end. The Germans were in default in reparations; they seemed intent upon destroying their currency so as to avoid full payments. But even if the mark were destroyed, the great captains of industry would still possess their real property intact, as the Dariac Report suggested. The French concluded that this property must be obtained and held until Germany remitted payment in full, hence the policy of productive pledges. Also central to French policy was the consideration that Germany must be forced to assume a subordinate position in European affairs, guaranteeing thereby French and Belgian security, both of which would be obtained if France held the Ruhr. Germany had theoretically been relegated to this position by her defeat in war, as the Treaty of Versailles presumably reflected. But the future would indicate that Germany could not be forced artificially into a secondary position. Her real power was too great, and the Franco-Belgian policy only kept antagonisms alive and engendered increased bitterness. However, no government either in France or in Belgium could have held power if a lenient policy toward Germany were attempted at that time. Poincaré, despite the fact that he had many enemies in France, was, therefore, the man of the hour, and pursued a popular course.

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[132] *Foreign Relations of the United States,* 1922, 2: pp. 192–195.

[133] H. G. Daniels, *The Rise of the German Republic* (New York, 1928), p. 203.

[134] Letter, Stresemann to Dr. Ing. Walter Randhahn then in Altenburg, S.A., Berlin, May 17, 1923, in records of the Weimar Republic entitled "Stresemann's *Nachlass,*" National Archives, Washington, D. C., microfilm serial 7116H, National Archives Microcopy T120, roll 3098, frames H145482-84.

[135] Daniel's views are typical of non-German analyses. For typical German interpretations, see, e.g., Friedensburg, *Die Weimarer Republik,* pp. 88–90; and Conze, *Die Zeit Wilhelms II und die Weimarer Republik,* p. 188.

There remains a note regarding Italy. She, as always in the twentieth century, vacillated, being reluctant to commit herself. When she did act, she did so tentatively, enabling her to maneuver opportunistically. Neither Poincaré nor Cuno derived much assistance from Rome.

Not the least of the tragedies of Europe in the era 1918–1939 was the Ruhr occupation. Though one can readily sympathize with the French and Belgians, who, after all, had suffered unbelievably in 1914–1918, France, in particular, must bear much blame for subsequent events in the Ruhr. Of course, Cuno's Germany must also shoulder a measure of the responsibility for the Ruhr occupation and its consequences. Cuno's policies rested on a consensus in resisting the French and attempting a revision of the Treaty. It is also difficult to avoid the conclusion that the United States and Britain acting in concert could have effectively changed history's course at this point. Instead, France and Germany were left to confront each other once more in dangerous circumstances and in an inflamed climate of opinion. The results opened old wounds and inflicted new ones which the Nazis exploited and which persisted unhealed beyond the Era of Locarno, the spirit of the latter therefore being but a façade, papering over the labyrinth of fissures in Europe, which made inevitable the earthquake to come. In the last analysis, the Ruhr occupation was one of those events in the period between the wars that ensured that it was a time of truce, not peace.

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